

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF ANIMAL INDUSTRY—Bulletin No. 79.

D. E. SALMON, D. V. M., Chief of Bureau.

THE DETERMINATION OF GENERIC TYPES.

AND A

LIST OF ROUNDWORM GENERA. WITH THEIR
ORIGINAL AND TYPE SPECIES.

BY

CH. WARDELL STILES, Ph. D.,

*Zoologist, U. S. Public Health and Marine-Hospital Service; Consulting
Zoologist, Bureau of Animal Industry,*

AND

ALBERT HASSALL, M. R. C. V. S.,

Assistant in Zoology, Bureau of Animal Industry.



WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1905.

LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., July 20, 1905.

SIR: I have the honor to transmit herewith for publication a technical manuscript entitled "The Determination of Generic Types, and a List of Roundworm Genera, with their Original and Type Species", prepared by Doctors Stiles and Hassall.

Medical, veterinary, and zoological literature has been inconvenienced to no slight degree by changes in the technical names, due to a failure on the part of authors to designate type species for their genera. The present paper is prepared in the hope of definitely fixing the types for the roundworm genera, especially for those of importance in human and comparative medicine, so that confusion in the future may be reduced.

The adoption of a rule by the International Commission on Zoological Nomenclature to the effect that no new generic name may demand recognition in the future unless its author definitely fixes the type at its original publication is worthy of serious consideration, as such a rule would greatly simplify work.

Respectfully,

D. E. SALMON,
Chief of Bureau.

HON. JAMES WILSON,
Secretary of Agriculture.

TABLE OF CONTENTS.

	Page.
Summary	7
Part I. Principles involved in designating the types of genera of parasites.....	10-80
Introduction	10
Genera other than nematodes included in this paper.....	11
Types designated or not designated	11
Division of work	12
Homonyms	12
Historical review of type designation	12
The principle of generic types foreshadowed by Linnæus, 1751	12
The British Association (Stricklandian) Code.....	13
The Dall Code, 1877	15
The American Ornithologists' Union Code, 1886, 1892.....	17
The Code of the German Zoological Society, 1894.....	18
The Merton Rules, 1896	18
Gill, 1896	20
Durrant, 1898	21
Code of Botanical Nomenclature, A. A. A. S., 1904	22
The International Code of Zoological Nomenclature, 1904	23
Axioms relative to type species.....	24
Rules and recommendations concerning types	24
A. Genera for which types are designated or implied in the original publication	25
1. Genera originally published with only one species. "Monotypical genera"	25
List of genera (chiefly nematodes) originally published with a single species.....	25
2. Genera originally published with only one valid species, but also with one or more species inquirendæ.....	29
Nematode genera of this class.....	29
3. Genera originally published with a species definitely designated as type (type by original designation).....	30
Roundworm genera with types by original designation...	31
4. Type by original implication through use of the specific name <i>typicus</i> or <i>typus</i>	31
Nematode genera with type determined by use of specific name <i>typicus</i>	32
5. Type by absolute tautonymy	32
Cases of type by absolute tautonymy.....	34
Case of <i>Angiostoma</i> Dujardin, 1845.....	34
Case of <i>Anguillula</i> Mueller, 1786.....	34
Case of <i>Capsularia</i> Zeder, 1800.....	37
Case of <i>Chaos</i> Linnæus, 1767.....	38
6. Type by virtual tautonymy.....	39
7. Types of renamed genera.....	40
8. Type by inclusion	42
9. Genera containing types of several earlier genera.....	47
Case of <i>Acuaria</i> , <i>Spiroptera</i> , <i>Anthuris</i> , and <i>Dispharagus</i> ..	48

PART I. Principles involved in designating the types of genera of parasites—	Page.
Continued.	
Rules and recommendations concerning types—Continued.	
B. Genera for which types have been selected in later publications..	52
10. Type by subsequent designation.....	52
Roundworm genera with types by later designation	53
C. Genera for which no type has been definitely selected	55
11. Collective biological groups requiring no type species.....	55
12. Type by elimination.....	56
Elimination of species inquirendæ (see p. 29).....	57
Elimination of doubtfully referred species	57
Elimination of species selected as types of other genera..	58
Restricted and unrestricted elimination	58
13. Preference to be shown to species not subsequently classified in other genera.....	60
14. Type by page precedence	62
15. Sexually mature forms take precedence over larval or imma- ture forms.....	63
16. Preference to be shown to species examined by author of the genus.....	63
17. Preference to be shown to species named <i>communis</i> , <i>vulgaris</i> , <i>officinalis</i> , or <i>medicinalis</i>	64
18. The best described, best figured, best known, or most easily obtainable species	64
19. The original generic name to go with the greater number of species.....	65
20. Special points to be considered in connection with genera of parasitic groups	65
21. Remaining genera mentioned in this paper.....	66
Correlated nomenclatural questions.....	67
22. Synonymy by original publication.....	68
23. Rule of homonyms	69
Roundworm generic names which are absolutely preoccu- pied	70
Roundworm generic names which absolutely preoccupy other names.....	71
24. Phononyms	72
25. Doubtful homonyms.....	73
26. Emendation of names.....	76
27. Nomenclatural status of misprints.....	78
28. Origin of the Law of Priority.....	78
29. Rudolphi's Rules of Nomenclature.....	78
30. Polynomial authors between 1758 and 1819.....	80
Part II. List of generic names, chiefly nematodes, with their original and type species	81-150
Addenda	150

THE DETERMINATION OF GENERIC TYPES,

AND A

LIST OF ROUNDWORM GENERA, WITH THEIR ORIGINAL AND TYPE SPECIES.

BY CH. WARDELL STILES, PH. D.,
*Zoologist of U. S. Public Health and Marine-Hospital Service; Consulting
Zoologist of Bureau of Animal Industry,*

AND
ALBERT HASSALL, M. R. C. V. S.,
Assistant in Zoology, Bureau of Animal Industry.

SUMMARY.

Part I contains a general discussion on determination of generic types.

A genus without a type species is like a ship without anchor or rudder, and a failure on the part of authors to designate types has been one of the most fruitful sources of trouble in systematic zoology and nomenclature. The existing codes of nomenclature recognize the importance of type species, but the rules for their determination are not explicit enough, while the views on the method of determination vary greatly among authors.

It seems desirable, but at present impracticable, to have complete, objective rules covering type determination, whereby the subjective element may be entirely eliminated, and whereby all types may be determined purely from the literature, without reference to the diagnosis or anatomy of an animal. Precedence, as supported by many systematists, would accomplish this, yet would lead to many difficulties; still it must be admitted that this rule has great advantages despite its disadvantages.

Although it seems impracticable at present to attempt to adopt any complete series of rules on type determination which shall be followed seriatim, still satisfactory rules can be formulated which will cover the majority of cases that arise, and these rules may be supplemented by recommendations which bring to mind methods which it will be well to follow, unless strongly contraindicated by practical considerations. While urging zoologists to designate the type of every new genus proposed in the future, we shall suggest to the International Commission on Zoological Nomenclature the following rules and recommendations, as amendments to the Code, for guidance in determining the types in the case of older genera.

1. RULE.—A genus proposed with a single original species takes that species as type. (Monotypical genera.)

2. RULE.—The type of a genus (containing, from the standpoint of the original author, both valid and doubtful species) must never be selected from the species which the original author of the genus clearly designated as species inquirendæ at the time of the publication of the generic name.

3. RULE.—When in the original publication of a genus one of the species is definitely designated as type, this species should be accepted as type, regardless of any other considerations. (Type by original designation.)

4a. RULE.—If, in the original publication of a genus, *typicus* or *typus* is used as a new specific name for one of the species, such use shall be construed as “type by original designation.”

4b. RECOMMENDATION.—It is well to avoid the introduction of the names *typicus* or *typus* as new names for species or subspecies, since such names are always liable to result in confusion later.

5. RULE.—If a genus, without designated type, contains among its original species one possessing the generic name as its specific or subspecific name, either as valid name or synonym, that species or subspecies becomes ipso facto type of the genus. (Type by absolute tautonymy.)

6. RECOMMENDATION.—If a genus, without designated type, contains among its original species one possessing as specific or subspecific name, either as valid name or as synonym, a name which is virtually the same as the generic name, or of the same origin or same meaning, preference should be shown to that species in designating the type, unless such preference is strongly contraindicated by other factors. (Type by virtual tautonymy.)

7. RULE.—In case a generic name without designated type is proposed as a substitute for another generic name, with or without type, the type of either when established becomes ipso facto type of the other.

8. RULE.—If an author proposes a genus, without designating a type, and includes among the original species [i. e., the valid species from his standpoint] the determined type of an earlier genus, such type becomes ipso facto the type of the new genus. (Type by inclusion.)

9. RULE.—If a genus without a designated type contains types of two or more earlier genera, the type of the new genus is to be selected from the contained types (the case being the same as a genus with two or more species, according to the number of types in question), unless it can be shown that such procedure is directly contraindicated by the original author's intentions.

10. RULE.—If an author, in publishing a genus with more than one valid species, fails to designate or to indicate its type, any subsequent author may select the type, and such designation is not subject to change. (Type by subsequent designation.)

11. RULE.—Certain biological groups which have been distinctly proposed as collective groups, but not as systematic units of generic rank, may be treated for convenience as if they were genera, but they require no type species. Example: *Agamodistomum*.

12a. RULE.—The following species are excluded from consideration in selecting the types of genera:

(a) Species which were not included under the generic name at the time of its original publication.

(b) Species which were *species inquirendæ* from the standpoint of the author of the generic name at the time of its publication.

(c) Species which the author of the genus doubtfully referred to it.

(d) Species which have subsequently been selected to serve as types for other genera, unless this applies to all of the available species, in which case the last species so selected becomes the type of the original genus; or unless the species which the original author took as his type has been transferred, in which case the original author's intentions should be carried out. (Type by elimination.)

12b. RULE.—In case of Linnaean genera select as type the most common or the medicinal species. (Linnaean rule.)

12c. RECOMMENDATION.—The following species should be shown preference in selecting the type, unless such procedure is contraindicated by the original author's intentions or by practical considerations:

(a) If the genus contains both exotic and nonexotic species from the standpoint of the original author, the type should be selected from the nonexotic species.

(b) If some of the original species have later been classified in other genera, but not designated as their types, preference should be shown to the species still remaining in the original genus.

(c) All other things being equal, page precedence should obtain in selecting a type.

(d) Species based upon sexually mature specimens should take precedence over species based upon larval or immature forms.

(e) All other things being equal, show preference to a species which the author of a genus actually studied at or before the time he proposed the genus.

(f) Show preference to a species bearing the name *communis*, *vulgaris*, *medicinalis*, or *officinalis*.

(g) Show preference to the best described, best figured, best known, most easily obtainable species, or of which a type specimen can be obtained.

(h) Show preference to a species which belongs to a group containing as large a number of the species as possible.

(i) In parasitic genera, select if possible a species which occurs in man or in some food animal, or in some very common and widespread host.

By following the foregoing rules and recommendations, types may be designated for the great majority of genera without reference to any subjective interpretation of diagnosis or anatomical characters and their value; in the majority of cases the type will be selected largely on the basis of the original publication, yet the inconveniences connected with the "rule of page precedence" will be very largely avoided.

In connection with correlated nomenclatural questions, the conclusion is drawn that the principle of "synonymy by original publication," despite its Draconian nature, is a just rule to follow (p. 68).

The "rule of homonyms" for absolute homonyms, as provided for in the International Code, is unreservedly adopted (p. 69), but the Merton "rule of phononyms" (p. 72) is rejected, while doubtful homonyms (p. 73) are accepted as distinct names.

It is a matter of regret that we do not see our way clear to apply the rule for emendation until its supporters accomplish the vast amount of pioneer work (p. 76) which is prerequisite to a practical application of their rule; hence, for the present, we find ourselves forced to continue to use "original orthography," be this good, bad, or indifferent.

Contrary to some authors it is maintained (p. 78) that misprints have a definite nomenclatural status.

The Law of Priority is not a new idea, as assumed by some zoologists, but dates from Linnæus, and contrary to the apparent assumption of some writers, it was accepted by Rudolphi in 1801, who proposed a code of nomenclature (p. 78) which has been very generally overlooked.

Some of the difficulties of which some authors complain in helminthological nomenclature could be obviated if the rule relative to polynomial authors (p. 80) were to be more rigidly enforced for authors between 1758 and 1819. By an agreement among helminthologists, to the effect that certain doubtfully binomial works were to be considered polynomial, and therefore excluded from consideration in nomenclatural matters, not an inconsiderable number of the difficulties which arise could be avoided.

Part II contains a list of all the roundworm genera accessible in the card catalogue of the Bureau of Animal Industry, together with certain other genera which are cited for practical reasons. With each genus the original species are given, and in most instances the type species is definitely fixed.

Bibliographic references in this paper are taken from the Index-Catalogue of Medical and Veterinary Zoology (Bulletin No. 39, Bureau of Animal Industry).

PART I.—PRINCIPLES INVOLVED IN DESIGNATING THE TYPES OF GENERA OF PARASITES.

INTRODUCTION.

Cook (1900) has well remarked that "botany without designation of types is like geography without position," and the same remark applies with equal force to zoology. The designation of the typical species of genera is one of the most important points in nomenclature.

Unfortunately none of the existing codes treats of the subject of type designation in an entirely satisfactory manner. Unfortunately, also, there is considerable diversity of opinion among authors as to the methods to be followed in selecting the type. In rare instances (Snellen), a systematist will deny the advisability of acknowledging that a genus should have a type. Very commonly, more particularly among earlier authors, the selection of generic types has been ignored. Some authors consider that the selection of a type should be made purely by rule, thus eliminating all subjective element; for instance, by selecting the first species in the original list. Other workers consider that a comparison of the original generic diagnosis with the original specific diagnosis is the most important process to be considered. Still other systematists are inclined to ignore the original diagnoses. Some systematists have attempted to formulate a definite series of rules, to be followed seriatim. Others doubt the advisability of rules to cover the subject and maintain that the entire process is one to be governed by the particular case which arises for decision. Some workers consider that the establishment of types is to be based primarily upon anatomical study; others maintain it is to be based purely upon a study of the literature. Several systematists have admitted that they disliked to determine types, because it seemed impossible to do so in such a way as to avoid polemic criticism.

We have been requested by several authors, botanical as well as zoological, to formulate our views on this subject, and it is partially in compliance with these requests that the present paper is prepared. A further reason for discussing the matter is that we consider it one of the most important subjects in the entire field of nomenclature, and we view the practice of failing to designate the type species as one of the most fruitful sources of confusion in systematic writings.

Our general position on the subject may be summed up as follows: Types should be determined for all generic names as soon as possible, since a generic name without a definitely established type is always an element of danger in both systematic and bibliographic zoology. Although it does not seem possible to lay down any series of rules for the determination of types which will meet with the approval of all systematists, or which will not in some instances lead to rulings that will arouse criticism on the part of some authors, still it seems justified to adopt certain rules covering the subject and to carry them out consistently, even at the risk of disapproval of other workers. These rules should be objective so far as possible; recommendations (in distinction to rules) can not, however, be entirely avoided, since there are some cases in which it hardly seems possible at present to exclude entirely the subjective element.

Satisfactory rules can be made which will govern a large percentage (perhaps 80 to 90 per cent) of the cases. Any author who attempts to determine types in the remaining cases will incur criticism from one source or another, no matter what species he selects.

In determining types for certain of the nematode genera, this has accordingly been done with full knowledge of the fact that any person who attempts work of this kind subjects himself to criticism, frequently expressed in terms more vigorous than diplomatic.

In discussing the principles involved, the parasites especially have been held in mind, but the principles involved in helminthology are the same as those involved in other fields of zoology. One can not, therefore, plead for any exceptions in favor of helminthology, since exceptions in this field invite exceptions in other fields, and are thus both dangerous and shortsighted. The more exceptions admitted, the less hope there is for eventually having an international nomenclature. Better it is by far that a temporary inconvenience be borne than that exceptions be made in favor of any one group.

GENERA OTHER THAN NEMATODES INCLUDED IN THIS PAPER.

It has been found advisable to include in this list a few names which do not belong to the Nematoda, but which have at one time or another been used as or confused with nemathelminth names.

TYPES DESIGNATED OR NOT DESIGNATED.

For the generic names collected, an attempt has been made to determine the type in case the proper data were accessible. In some cases in which we have hesitated, for various reasons, to definitely fix the type species at present, species have been suggested with reserve (preceding the specific name by "?" or "probably") which it would probably be best to take as type, so far as the data are accessible.

This method is followed in order not to prevent some other author from selecting some other species in case it may seem best for him to do so. The action on these cases in the present paper is not to be interpreted as *designation of type*, but simply as an indication of the species which, other things being equal, it seems to be best (so far as data are accessible at the present moment) to select as "anchors" for the genera in question.

DIVISION OF WORK.

The list of genera (pp. 81-150), upon which the work is based, was originally compiled several years ago. Most of the names were taken from the card catalogue of the Bureau of Animal Industry. In the bibliographic work very material aid has been rendered by Miss Caroline Myers, of the Bureau of Animal Industry, and it is a pleasure to express our obligations to her for her painstaking labor, especially in tracing obscure references. The designation of types is the joint work of Stiles and Hassall. Owing to a prolonged absence of Hassall from Washington, during which time joint work was impossible, the discussion of the principles of type designation devolved upon Stiles.

HOMONYMS.

In the following list the homonyms (identical names) and phononyms (similar names) are given, so far as accessible in the Bureau catalogue. The orthography, authors, and dates of such names have not been personally verified by us, but they have been accepted from the lists by Agassiz, Scudder, the Zoological Record, Zoologischer Anzeiger, Palmer, Sherborn, Waterhouse, etc.

HISTORICAL REVIEW OF TYPE DESIGNATION.

To give a complete historical review of the subject of type designation would exhaust both the readers and the writers, but in the present paper reference will be made to some of the more important historical data.

THE PRINCIPLE OF GENERIC TYPES FORESHADOWED BY LINNÆUS, 1751.

The idea of the selection of a single species as type for a genus was foreshadowed by Linnæus (1751, 1797) in his *Philosophia Botanica* as follows: "Si genus receptum, secundum jus naturæ et artis, in plura dirimi debet, tum nomen antea commune manebit vulgatissimæ et officinali plantæ."

While Linnæus referred especially to plants, it has become customary to interpret the Linnæan Code as applicable in zoology also, and it is possible therefore to determine the types of a number of Linnæan genera on the basis of this passage.

THE BRITISH ASSOCIATION (STRICKLANDIAN) CODE.

It would appear that the Stricklandian Code was perhaps the first publication in which the subject of types was discussed and formulated in a rather definite manner; hence, from the historical view point the passages in question are important.

The British Association Code expressed the law of priority as follows:

Law of priority the only effectual and just one.—It being admitted on all hands that words are only the conventional signs of ideas, it is evident that language can only attain its end effectually by being permanently established and generally recognized. This consideration ought, it would seem, to have checked those who are continually attempting to subvert the established language of zoölogy by substituting terms of their own coinage. But, forgetting the true nature of language, they persist in confounding the *name* of a species or group with its *definition*; and because the former often falls short of the fullness of expression found in the latter, they cancel it without hesitation and introduce some new term which appears to them more characteristic, but which is utterly unknown to the science and is therefore devoid of all authority. If these persons were to object to such names of men as *Long*, *Little*, *Armstrong*, *Golightly*, etc., in cases where they fail to apply to the individuals who bear them, or should complain of the names *Gough*, *Lawrence*, or *Harrey*, that they were devoid of meaning, and should hence propose to change them for more characteristic appellations, they would not act more unphilosophically or inconsiderately than they do in the case before us; for, in truth, it matters not in the least by what conventional sound we agree to designate an individual object, provided the sign to be employed be stamped with such an authority as will suffice to make it pass current. Now, in zoölogy no one person can subsequently claim an authority equal to that possessed by the person who is the first to define a new genus or describe a new species, and hence it is that the name originally given, even though it may be inferior in point of elegance or expressiveness to those subsequently proposed, ought as a general principle to be permanently retained. To this consideration we ought to add the injustice of erasing the name originally selected by the person to whose labors we owe our first knowledge of the object; and we should reflect how much the permission of such a practice opens a door to obscure pretenders for dragging themselves into notice at the expense of original observers. Neither can an author be permitted to alter a name which he himself has once published, except in accordance with fixed and equitable laws. It is well observed by Decandolle, “L’auteur même qui a le premier établi un nom n’a pas plus qu’un autre le droit de le changer pour simple cause d’impropriété. La priorité en effet est un terme fixe, positif, qui n’admet rien, ni d’arbitraire ni de partial.”

For these reasons we have no hesitation in adopting as our fundamental maxim the “law of priority,” viz:

§1. The name originally given by the founder of a group or the describer of a species should be permanently retained to the exclusion of all subsequent synonyms (with the exceptions about to be noticed).

* * * *

Generic names to be retained for the typical portion of the old genus.—When a genus is subdivided into other genera, the original name should be retained for that portion of it which exhibits in the greatest degree its essential characters as at first defined. Authors frequently indicate this by selecting some one species as a fixed point of reference which they term the “type of the genus.” When they omit doing so, it may still in many cases be correctly inferred that the *first* species mentioned on their

list, if found accurately to agree with their definition, was regarded by them as the type. A specific name or its synonyms will also often serve to point out the particular species which by implication must be regarded as the original type of a genus. In such cases we are justified in restoring the name of the old genus to its typical signification, even when later authors have done otherwise.

We submit, therefore, that—

§4. The generic name should always be retained for that portion of the original genus which was considered typical by the author.

Example.—The genus *Picumnus* was established by Temminck and included two groups, one with four toes, the other with three, the former of which was regarded by the author as typical. Swainson, however, in raising these groups at a later period to the rank of genera gave a new name, *Asthenurus*, to the former group and retained *Picumnus* for the latter. In this case we have no choice but to restore the name, *Picumnus* Temm., to its correct sense, canceling the name *Asthenurus* Sw. and imposing a new name on the three-toed group which Swainson had called *Picumnus*.

When no type is indicated, then the original name is to be kept for that subsequent subdivision which first received it.—Our next proposition seems to require no explanation.

§5. When the evidence as to the original type of a genus is not perfectly clear and indisputable, then the person who first subdivides the genus may affix the original name to any portion of it at his discretion, and no later author has a right to transfer that name to any other part of the original genus.

A later name of the same extent as an earlier to be wholly canceled.—When an author infringes the law of priority by giving a new name to a genus which has been properly defined and named already, the only penalty which can be attached to this act of negligence or injustice is to expel the name so introduced from the pale of the science. It is not right, then, in such cases, to restrict the meaning of the later name so that it may stand side by side with the earlier one, as has sometimes been done. For instance, the genus *Monaulus* Vieill., 1816, is a precise equivalent to *Lophophorus* Temm., 1813, both authors having adopted the same species as their type, and therefore, when the latter genus came, in the course of time, to be divided into two, it was incorrect to give the condemned name, *Monaulus*, to one of the portions.

To state this succinctly:

§6. When two authors define and name the same genus, both making it exactly of the same extent, the later name should be canceled *in toto*, and not retained in a modified sense.

This rule admits of the following exception:

§7. Provided, however, that if these authors select their respective types from different sections of the genus, and these sections be afterwards raised into genera, then both these names may be retained in a restricted sense for the new genera, respectively.

Example.—The names (*Edenia* and *Melanetta* were originally coextensive synonyms, but their respective types were taken from different sections, which are now raised into genera, distinguished by the above titles.

No special rule is required for the cases in which the later of two generic names is so defined as to be less extensive in signification than the earlier, for if the later includes the type of the earlier genus, it would be canceled by the operation of §4; and if it does not include that type, it is in fact a distinct genus.

But when the later name is more extensive than the earlier, the following rule comes into operation:

A later name equivalent to several earlier ones is to be canceled.—The same principle which is involved in §6 will apply to §8.

§8. If the later name be so defined as to be equal in extent to two or more previously published genera, it must be canceled *in toto*.

Example.—*Psarocolius* Wagl., 1827, is equivalent to five or six genera previously published under other names, therefore *Psarocolius* should be canceled.

If these previously published genera be *separately adopted* (as is the case with the equivalents of *Psarocolius*), their original names will of course prevail; but if we follow the later author, in combining them into one, the following rule is necessary:

A genus compounded of two or more previously proposed genera whose characters are now deemed insufficient should retain the name of one of them.—It sometimes happens that the progress of science requires two or more genera, founded on insufficient or erroneous characters, to be combined together into one. In such cases the law of priority forbids us to cancel *all* the original names and impose a *new* one on this compound genus. We must therefore select some one species as a type or example, and give the generic name which it formerly bore to the whole group now formed. If these original generic names differ in date, the oldest one should be the one adopted.

§9. In compounding a genus out of several smaller ones, the earliest of them, if otherwise unobjectionable, should be selected and its former generic name be extended over the new genus so compounded.

Example.—The genera *Accentor* and *Prunella* of Vieillot, not being considered sufficiently distinct in character, are now united under the general name *Accentor*, that being the earliest.

It will thus be seen that the principle of “page precedence” was recognized by this Code, §4, but not as an ironclad law; the principle of type by tautonymy also seems to be referred to, §4; further, the principle of the first reviser is clearly referred to under §5; the principle of “type by inclusion” is evident in §6.

The principle of “type by tautonymy,” apparently indicated in the B. A. Code, is said to have first been advocated by Newton (1871, 1876, 1879). It was formulated by Carus and Stiles in 1898, and has recently (1902) been formally adopted by a number of American zoologists.

THE DALL CODE, 1877.

In the Dall (1877a, 39–40) Code the following paragraphs refer directly or indirectly to generic types:

§LI. When a group or genus is divided into two or more groups the original name must be preserved and given to one of the principal divisions. The division including the typical species of the primitive genus, if any type had been specified, or the oldest, best known, or most characteristic of the species originally included when the primitive genus was first described by its author, is the portion for which the original name is to be preserved. If there is no section specially so distinguished, that which retains the larger number of species should retain the old name (D. C.), but the latter can not be applied to a restricted group containing none of the species referred to the primitive group by its author at the time when it was described or when he enumerated the species contained in it.

The majority of the replies to query XII of the circular concur in the above.

According to Linnaeus the name should remain with the most common and official species; an equivocal expression if there is one which is most common and another the official species. The *Convolvulus sepium* and the *Erica vulgaris* were very common and very anciently named species when Brown made of one the genus *Calystegia*, and De Candolle of the other, his genus *Calluna*. It was, however, much better to do this than to change the names of a hundred species of *Convolvulus* and 200 of *Erica*. When there is no authoritative type the number of species should always be taken into consideration. (D. C.)

§LII. When an author has specified no type, it is then necessary in dividing his genus to retain his name for the subdivision containing the species which the next subsequent author treating of the genus has specified or regarded as the typical exemplar. (B. A.) If no subsequent author has selected a type, the first species of the primitive author may frequently be taken as the type, or a species may be selected from among those originally specified as belonging to the genus when it was formed, due regard being paid to the necessity of retaining as many of the original species as possible in the division which is to retain the old name.

It would manifestly be liable to introduce errors and confusion if it were insisted that the first species should invariably be taken as the type, or were it permitted to take species subsequently added to the group, and which the original author did not know when he established his genus. No arbitrary rule will suffice to determine offhand questions of so much complication as is often the decision in regard to the type of an ancient genus which has been studied by a number of authors.

In the first of the above cases lists are often arranged in alphabetical or faunistic order, or the aberrant species are placed at or near the beginning and end of the list, while the more generalized and characteristic species are put between the others. In the second case, aberrant species might be added and subsequently taken away from the genus, carrying with them the name consecrated by the primitive author to the very group which the subsequent reviser might then seize on for his own. Still more, the aberrant species carrying the primitive generic name might subsequently be found to belong to a genus described before the one revised. Then the name originally given to a valid group might be subject to rejection as a synonym, while the valid group itself which originally bore that name was rejoicing under a new appellation received from the industrious revisers! Absurd as it may appear, mutations similar to this might be mentioned.

The answers received to questions on this point in the circular will be seen to be by a large majority in concurrence with this section.

§LIII. In dividing a genus of which there are already synonyms, if these synonyms or any of them are typified by the same species or group of species as that or those originally selected as types for the primitive genus, the names should be canceled in toto and not used for the restricted subdivisions. (B. A.)

To use strictly equivalent synonyms in a new sense for different divisions in one family is sure to create confusion and necessitate lengthy discriminating passages in subsequent synonymical work. When the so-called synonyms are founded on species belonging to different sections of the genus, although the names may have been considered as coextensive in their application, it is desirable to use these names to indicate the divisions of the genus when it may be revised. (B. A.) In fact there is hardly any difference between the latter case and the revival of a valid but forgotten name for the group properly designated by it and to which another legal name can not be applied.

§LIV. In the case of the consolidation of two or more groups of the same nature, the oldest name must be retained for the whole. If both or all are of the same date, the reviser may select the one to be retained. (B. A., D. C.)

If a name of a genus be so defined as to be equal in extent to two or more previously published genera, it must be canceled *in toto*. (B. A.) Example: *Tritonium* Müller was so defined as to be equal to *Buccinum*, *Strombus*, and *Murex* of Linnæus. Hence it should be wholly rejected. *Psaracolius* Wagler is equivalent to five or six previously published genera, and must, therefore, be canceled. (B. A.)

It follows from the above that when it is necessary to unite several groups already named the earliest unobjectionable name must be retained for the consolidated group, with a modified diagnosis.

THE AMERICAN ORNITHOLOGISTS' UNION CODE, 1886, 1892.

The American Ornithologists' Union Code (1886, 1892, 42-44) treats generic types as follows:

CANON XX. When a genus is subdivided the original name of the genus is to be retained for that portion of it which contained the original type of the genus when this can be ascertained.

Remark.—This principle is universally conceded and requires no special comment.

CANON XXI. When no type is clearly indicated the author who first subdivides a genus may restrict the original name to such part of it as he may judge advisable, and such assignment shall not be subject to subsequent modification.

Remarks.—This, in substance, is the rule promulgated by the B. A. Committee in 1842, and it has been reiterated in most subsequent nomenclatural codes. Its propriety is perfectly apparent, and, as regards the future, no trouble need arise under it. It has happened, however, in the subdivision of comprehensive genera of Linnæus and other early authors that most perplexing complications have arisen, successive authors having removed one species after another as types or elements of new genera till each of the species included in the original genus has received a new generic designation, while the old generic name, if not lost sight of, has come to be applied to species unknown to the author of the original genus! This, of course, is obviously and radically wrong.

* * * * *

CANON XXII. In no case should the name be transferred to a group containing none of the species originally included in the genus.

Remark.—This rule is in strict accordance with the B. A. Code and with current usage.

CANON XXIII. If, however, the genus contains both exotic and nonexotic species—from the standpoint of the original author—and the generic term is one originally applied by the ancient Greeks or Romans, the process of elimination is to be restricted to the nonexotic species.

Remarks.—The purpose of this restriction in the application of the "principle of elimination" is to prevent the palpable impropriety of the transference of an ancient Greek or Latin name to species unknown to the ancients. By the unrestricted action of the principle of elimination the genus *Tetrao*, for example, becomes transferred to an American species, viz, *Tetrao phasianellus* of Linnæus, the transference being in itself not only undesirable, but, as it happens, subversive of currently accepted names. The working of the proposed modification of the principle of elimination may be thus illustrated.

The genus *Tetrao* Linn., 1758, contains the following:

Nonexotic species.	Exotic species.
1. <i>urogallus</i> (<i>Urogallus</i> Flem., 1822).	3. <i>canadensis</i> .
2. <i>tetrix</i> .	5. <i>phasianellus</i> .
4. <i>lagopus</i> (<i>Lagopus</i> Briss., 1760).	6. <i>cupido</i> .
7. <i>bonasia</i> (<i>Bonasia</i> Steph., 1819, plus Bon., 1828).	

This leaves *tetrix* as the type of the genus *Tetrao*, since *Lyrurus* Sw. was not established for it till 1831.

On the other hand, the process of unrestricted elimination would result as follows:

1. *urogallus* (*Urogallus* Flem., 1822).
2. *tetrix* (*Lyrurus* Sw., 1831).
3. *canadensis* (*Canace* Reich., 1852).
4. *lagopus* (*Lagopus* Briss., 1760).
5. *phasianellus* (*Pediocetes* Bd., 1858).
6. *cupido* (*Tympanuchus* Glog., 1842; *Cupidonia* Reich., 1850).
7. *bonasia* (*Bonasia* Steph., 1819, plus Bon., 1828).

Which would leave, as type for the genus *Tetrao*, *T. phasianellus*, which was the last species to be removed from the genus *Tetrao*, its removal being made by Baird in 1858, who made it the type of a genus *Pediocates*. No species being now left to bear the name *Tetrao*, it must be restored either to *T. phasianellus* (under the unrestricted action of the principle of elimination), or to *T. lyurus* (under the above-proposed restricted action of the principle of elimination). In the latter case, this ancient Greek name for a European species of Grouse would be still retained in nearly its original sense.

As in the case of *Tetrao*, so in the cases of many Linnæan and Brissonian genera, it has happened that, in the process of gradual elimination, exotic (or non-European) species only have been finally left in the original genus, while the European species have successively been made types of separate genera.

CANON XXIV. When no type is specified, the only available method of fixing the original name to some part of the genus to which it was originally applied is by the process of elimination, subject to the single modification provided for by Canon XXIII.

CANON XXV. A genus formed by the combination of two or more genera takes the name first given in a generic or subgeneric sense to either or any of its components. If both or all are of the same date, that one selected by the reviser is to be retained.

Remarks.—The propriety of this rule is too obvious to require special comment. It therefore follows that a later name equivalent to several earlier ones must be canceled, and that the earliest name applied to any of the previously established genera thus combined is to be taken as the designation of the new combination.

CANON XXVI. When the same genus has been defined and named by two authors, both giving it the same limits, the later name becomes a synonym of the earlier one; but in case these authors have specified types from different sections of the genus, and these sections be raised afterwards to the rank of genera, then both names are to be retained in a restricted sense for the new genera.

THE CODE OF THE GERMAN ZOOLOGICAL SOCIETY, 1894.

The Code (1894, 13–14) of the German Zoological Society contains the following provisions regarding types:

§25. Sind für eine Gattung verschiedene zulässige Namen annähernd gleichzeitig aufgestellt worden, so dass die Priorität nicht festzustellen ist, so ist derjenige Name zu wählen, für welchen eine "typische Art" aufgeführt war. In allen dadurch nicht zu erledigenden Fällen ist die Entscheidung des ersten Autors, welcher die Synonymie der verschiedenen Namen nachweist, massgebend.

§26. Wird eine Gattung in mehrere neue Gattungen aufgelöst, so verbleibt der alte Gattungsname der als Typus anzusehenden Art. Ist eine solche nicht mit Sicherheit festzustellen, so hat der die Auflösung vornehmende Autor eine der ursprünglich in dieser Gattung enthalten gewesenen Arten als Typus zu bestimmen. Werden Untergattungen zu Gattungen erhoben, so wird der Untergattungsname zum Gattungsnamen.

THE MERTON RULES, 1896.

In the "Merton Rules" (Walsingham & Durrant, 1896, 14–16) are found the following passages relating to types of genera:

40. The type of a genus must be one of the species originally placed in the genus by its founder, but no species can be regarded as a possible type if it can be shown that the founder of the genus had not seen it.

[N. B.—This and the following rules (40–47) apply with equal force to the sections of any grade.]

41. A genus from its foundation belongs to one of three classes:

(1) MONOTYPICAL (i. e., described from a single species, no other being known, or described from a single specified species with which are associated other species considered to be identical in structure).

(2) ISOTYPICAL (i. e., described from more than one species, all of which are congeneric).

(3) HETEROTYPICAL (i. e., described from more than one species, these differing in structure).

(In class *one*, the single species described, or the single species cited, is the type.

In classes *two* and *three*, the sum of the species therein contained constitutes the "type" of the *original* author, unless it was indicated that one or more of these species were not considered to be typical.)

42. If the author of an isotypical or heterotypical genus subsequently removes one of his original types to another genus, this species ceases to be a possible type for the genus in which it was first placed.

43. In ascertaining the type of a genus not monotypical absolute adherence must be given to the law of priority.

44. He who first restricts a genus under its own name limits the possible type to one of the species included in his restriction, but if possibly avoidable a heterotypical genus must not be restricted to the detriment of an existing monotypical or isotypical genus.

45. When a heterotypical genus by restriction or specification of type becomes monotypical, the single species to which it is limited must thenceforth be accepted as the type of the genus, provided that this species had not previously been constituted the type of another genus.

46. Restriction is effected by omission, by elimination, or by specification.

47. The name of a heterotypical genus dates from its publication, but it dates as a genus from the time that it became isotypical or monotypical; e. g.,

TORTRIX, Jones 1850 (heterotypical for)

(1) *viridana*, Jones.

(2) *atrana*, Jones.

HETEROGNOMON, Smith 1855 (type) *viridana*, Jones.

PANDEMIS, Smith 1855 (type) *atrana*, Jones.

(Jones first published a generic name for which *viridana* was a possible type, but Smith first established *Heterognomon* as a genus based on the type *viridana*. The law of priority forbids the subsequent restriction of *Tortrix* to the detriment of *Heterognomon*, and therefore by elimination *atrana* was constituted the type of *Tortrix*, Jones, with which *Pandemis*, Smith, is synonymous.

N. B.—For brevity of illustration a fictitious example has been employed.)

48. If a subsequent author subdivide a heterotypical genus, distributing its types among differently named genera but retaining the original name as a subgeneric heading in more than one genus to which he refers a type, the law of priority shall be rigidly enforced, and his first limitation shall be taken as restricting the type; but should he in addition make use of the heterotypical generic name in a generic sense, it shall be held that it was his intention to limit the type to the species referred to in this sense, and his previous subgeneric limitation shall be ignored.

e. g., (1) Hübner published the heterotypical genus *Eudemis*, Verz. bek. Schm. 382 (1826). Stephens adopted this name in a subgeneric sense for the four genera *Ditula* Sph., *Pseudotomia* Sph., *Cnephasia* Crt., and *Sericoris* Tr. He constituted *profundana*, F. (= *porphyрана*, Hb., Sph.) the type of the first subgenus so named under *Ditula*. The law of priority should prevent any other species from becoming the type of *Eudemis* Hb.

e. g., (2) Hübner published the heterotypical genus *Notocelia*, Verz. bek. Schm. 379-80 (1826). Stephens' first use of this name is as a subgenus of *Spilonota* Stph., in which sense *ocellana* F. became the type of *Notocelia* Hb.

But a few pages later he employed *Notocelia* in a generic sense with the type *uddmanniana*, L., describing the genus and remarking on its synonymy. It is, therefore, obvious that it was his intention to retain the full generic value of the name, and his second limitation should be adopted in preference to his first.

GILL, 1896.

Gill (1896, 20-21), in discussing types, makes the following remarks:

TYPONYMS.

The question, what is necessary to insure reception of a generic name, is one of those concerning which there is a difference of opinion. By some a definition is considered to be requisite, but by others the specification of a type is only required. But the demand in such case is simply that the definition shall be made. It may be inaccurate or not to the point; it may be given up at once and never adopted by the author himself afterwards or by anyone else. Nevertheless, the condition is fulfilled by the attempt to give the definition. In short, the attempt is required in order that the competency (or its want) of the namer may be known, and if incompetency is shown thereby—no matter! The attempt has been made. The indication by a type is not sufficient.

Anyone who has had occasion to investigate the history of any large group must have been often perplexed on determining on what special subdivision of a disintegrated genus the original names should be settled. The old genus may have been a very comprehensive one, covering many genera and even families of modern zoology, and of course the investigator has to ignore the original diagnosis. He must often acknowledge how much better it would have been if the genus had been originally indicated by a type rather than a diagnosis. Many naturalists, therefore, now recognize a typonym to be eligible as a generic name. Among such are those guided by the code formulated by the American Ornithologists' Union, to which reference may be made and in which will be found some judicious remarks on the subject in Canon XLII. Certainly it is more rational to accept a typonym than to require a definition for show rather than use. Nevertheless, I fully recognize the obligation of the genus-maker to indicate by diagnosis, as well as type, his conception of generic characters.

FIRST SPECIES OF A GENUS NOT ITS TYPE.

On account of the difficulty of determining the applicability of a generic name when a large genus is to be subdivided, it has been the practice of some zoologists to take the first species of a genus as its type. This, it has been claimed, is in pursuance of the law of priority. It is, however, an extreme, if not illegitimate, extension of the law, and has generally been discarded in recent years. But in the past it had eminent advocates, such as George Robert Gray in Ornithology and Pieter Van Bleeker in Ichthyology. A few still adhere to the practice, and within a few months two excellent zoologists have defended their application of names by statements that the first species of the old genera justified their procedure. The contention of one involves the names which shall be given to cray-fishes and lobsters.

It is evident that the fathers of zoological nomenclature never contemplated such a treatment of their names, and the application of the rule to their genera would result in some curious and unexpected conditions. Let us see how some genera of

Linnæus would fare. The first species of *Phoca* was the fur seal, the first species of *Mustela* the sea otter, the first of *Mus* the guinea pig, and the first of *Cervus* was the giraffe. These are sufficient to show what incongruities would flow from the adoption of the rule.

DURRANT, 1898.

An exceedingly interesting and important correspondence on the subject of "Nomenclature of Lepidoptera: Correspondence relating to questions circulated by Sir George F. Hampson, Bart.," was published by Durrant in 1898. Opinions are cited from Prof. Scudder, Prof. Fernald, Prof. J. B. Smith, Dr. Standinger, Herr P. C. T. Snellen, Prof. Aurivillius, Prof. A. R. Grote, Lord Walsingham, E. Meyrick, esq., W. F. Kirby, esq., and Sir G. F. Hampson.

Of these, Snellen stood alone in totally rejecting the system of generic types. The following is an analysis of the replies of the other ten men:

1. The type of a genus must be a species originally included in it by its founder. (Adopted by all ten men.)

2. The type must conform to the original description of the genus (a species excluded by the description can not be the type). (Adopted by all ten.)

2A. Unless direct error of observation can be inferred. (Meyrick and Kirby.)

2B. And to the meaning (if any) of the generic name. (Meyrick, Kirby, Hampson, Walsingham.)

3. That a species included with doubt can not be type. (Walsingham, Grote, Kirby.)

4. That a *name* included (without the species being known to the founder) can not establish any claim to the recognition of the *species* as a possible type. (Adopted by Hampson, Walsingham, and Smith; apparently opposed by Kirby.)

5. The first species, or the first species agreeing with the description to be considered the type. (Adopted by Hampson and Standinger; opposed by other eight.)

6. Subsequent citation or restrictions must be accepted in chronological sequence:

6A. If they are not at variance with the original intention of the author. (Walsingham, Meyrick, Kirby, Fernald, Smith, Scudder, Grote, apparently Standinger.)

6B. Disregarding the supposed intentions of the author but not any clear or evident intention. (Grote.)

6C. Providing that the subsequent author expressly fixed the type or intentionally divided the genus and that he retained the old name for one part; the effect of omission of species from merely faunistic works to be ignored. (Aurivillius.)

6D. A species subsequently removed by the founder to another genus ceases to be a type of the original genus. (Walsingham.)

7. When the historical method has been exhausted the species (or group of species) which agrees best with the description should be regarded as typical. (Walsingham, Meyrick, Fernald, Smith, Aurivillius.)

7A. But if all equally agree the type may be fixed at discretion. (Meyrick, Walsingham, Smith.)

7Aa. But would assume the type to be a species from the author's own country, the one with which he seems to be most familiar, and if the preparatory stages are mentioned should assume the commonest species (as the one with which he was likely to have the greatest acquaintance) to be the type. (Smith.)

7B. If all agree equally well the first species is the type. (Fernald, Kirby.)

7C. If two or more agree better than the remainder, the first of those that do agree is the type. (Fernald, Kirby.)

7d. If one species is more fully described than the others, or if it is figured, it should be regarded as the type. (Kirby.)

7e. The majority of homogeneous species should be taken as representing a restricted genus. (Kirby.)

8. If the generic characters are better developed in one species (or group of species) this species (or group) must be held typical. (Apparently ignoring previous action.) (Aurivillius.)

9. If the description and included species prove that two or more genera were intended to include the same animals, they must be regarded as synonyms. (See B. A. Code, § 6.) (Aurivillius.)

9A. If, however, the original types of these genera were heterotypical each of the genera is valid for its own type. (B. A. Code, § 7.) (Durrant.)

9B. If types heterotypical in structure have been assigned to each genus (there being no evidence to disprove the possibility of their having been the original types) the genera should be accepted in their restricted sense. (Durrant.)

CODE OF BOTANICAL NOMENCLATURE, A. A. A. S., 1904.

Of the botanical codes we will mention only the Code of Botanical Nomenclature (1904), which the Nomenclature Commission of the Botanical Club of the American Association for the Advancement of Science has proposed for consideration of the International Botanical Congress (Vienna, 1905) as substitute for the Code of 1867. This newly proposed code contains the following paragraphs regarding types:

CANON 15. The nomenclatorial type of a genus or subgenus is the species originally named or designated by the author of the name. If no species was designated, the type is the first binomial species in order eligible under the following provisions:

(a) The type is to be selected from a subgenus, section, or other list of species originally designated as typical.

Examples.—*Psilogramme* Kuhn, Festschr. 50-Jähr. Jub. Königs. Realschule zu Berlin, 332 (1882), is typified by the first-mentioned species of the second section *Eupsilogramme*, and not from species included in the first section *Jamesonia*, which is based on a generic name previously published; *Phania* DC. Prodr. 5: 114 (1826), is typified by *P. multicaulis* DC., the only species of the section *Euphania*.

(b) A figured species is to be selected rather than an unfigured species in the same work; or, in the absence of a figure, preference is to be given to a species accompanied by the citation of a figure.

Examples.—*Lespedeza* Michx. Fl. Bor. Am. 2: 70 (1803), is typified by *L. procumbens* Michx. loc. cit. pl. 39, the species first figured; *Basanacantha* Hook. f. in Benth. & Hook. Gen. Pl. 2: 82 (1873), is typified by *Randia tetracantha* (Cav.) DC., the second species cited, as this had been figured by Cavanilles, whereas *Randia Humboldtiana* DC., the species first mentioned by Hooker, had not been figured.

(c) The types of genera adopted through citations of nonbinomial literature (with or without change of name), are to be selected from those of the original species which receive names in the first binomial publication. The genera of Linnæus' Species Plantarum (1753) are to be typified through the citations given in his Genera Plantarum (1754).

Note.—The Species Plantarum contains no generic references, but the 1754 edition of the Genera Plantarum was evidently prepared at the same time and was in effect a complementary volume of the same work. It accords much more nearly than other editions with the treatment followed in the Species Plantarum, and thus

makes it possible to retain more of the Linnaean generic names in their current application.

Examples.—*Cypripedium* L. Sp. Pl. 951, a genus adopted from Tournefort with a change of his name *Calceolus*, is typified by *Cypripedium Calceolus*, the only species common to both authors; *Seseli* L. Sp. Pl. 259, a genus adopted from Boerhaave, is typified by the second species of Linnaeus, *Seseli montanum*, which is the first in Linnaeus of the species common to both authors; *Silene* L. Sp. Pl. 416, a genus adopted from Dillenius with a change of his name *Viscago*, is typified by *Silene anglica*, the first in Linnaeus of the thirteen species figured by Dillenius; *Fritillaria* L. Sp. Pl. 303, a genus adopted from Tournefort, is typified by the fifth species of Linnaeus, *Fritillaria Meleagris*, which is one of the three species included in *Fritillaria* by both authors, and is selected from these three because it is the one figured by Tournefort.

(d) When a prebinomial generic name is displaced by the publication of a generic name within binomial usage, the application of the displaced name to a species under the new generic name designates the type.

Example.—*Dianthus* L. Sp. Pl. 409, a genus adopted from Tournefort with a change of his name *Caryophyllus*, is typified by *Dianthus Caryophyllus*, one of the fifteen original species of Linnaeus.

(e) The application to a genus of a former specific name of one of the included species, designates the type.

Examples.—*Amsonia* Walt. Fl. Car. 98 (1788), is typified by *Tabernæmontana Amsonia* L., one of its two original species; *Sordaria* Ces. & De N. Comm. Soc. Critt. Ital. I: 225 (1863), is typified by *Sphaeria Sordaria* Fr., one of its twelve original species.

(f) To avoid change in the current application of a Linnaean generic name, a well-known economic species may be selected as the type, in accordance with the principle stated by Linnaeus (Phil. Bot. 197. 1751): "Si genus receptum, secundum jus naturæ et artis, in plura dirimi debet, tum nomen antea commune manebit vulgarissimæ et officiali plantæ."

Examples.—*Poa* L. Sp. Pl. 67, is typified by *P. pratensis* L., the commonest of its original species; *Mollugo* L. Sp. Pl. 89, is typified by *M. verticillata* L., the commonest of its original species.

THE INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE, 1904.

The International Codes of Zoological Nomenclature of Paris, 1889; Moscow, 1892; Cambridge, 1898; Berlin, 1901, and Berne, 1904, all treat of types. It will suffice to quote the 1905 (Berne, 1904) edition:

ART. 29. If a genus is divided into two or more restricted genera, its valid name must be retained for one of the restricted genera. If a type was originally established for said genus, the generic name is retained for the restricted genus containing said type.

ART. 30. If the original type of a genus was not indicated, the author who first subdivides the genus may apply the name of the original genus to such restricted genus or subgenus as may be judged advisable, and such assignment is not subject to subsequent change. In no case, however, can the name of the original genus be transferred to a group containing none of the species originally included in the genus; nor can a species be selected as type which was not originally included in the genus, or which the author of the generic name doubtfully referred to it.

Recommendation.—In selecting a type, authors should govern themselves by the following:

a. A genus which contains a species bearing the same name, either as a valid name or as a synonym, takes that species as type.

b. Select as type some species which the original author studied personally, unless it can be definitely shown that he had some other species more particularly in mind.

c. If the original genus has already been divided without designation of type, the type should be restricted by elimination, namely, by successively rejecting all the species which have already been transferred to other genera; the type is then selected from the species which remain.

If the genus contains both exotic and nonexotic species, from the standpoint of the original author, the type is to be selected from the nonexotic species.

d. Select as type the species which is best described, or best figured, or best known.

AXIOMS RELATIVE TO TYPE SPECIES.

In determining the type species of a genus, it is self-evident that *such determination should be made in accordance with the original intentions of the original author of the genus, provided his intentions can be definitely recognized.*

Not only is this proposition in harmony with the spirit of the law of priority, but it has its very practical application, namely, the more closely it is possible to restrict the determination of a type species to the original paper in which the genus was published, the less literature one has to consider and the fewer will be the divergent views which must be discussed. A blind adoption of the rule of "page precedence" (see pp. 62-63) would permit a determination of all types upon basis of the first generic publication, and, radical as the rule is, it must be admitted, even by those of us who do not believe in it, that it has much in its favor and that it is possibly still an open question as to whether it leads to greater inconvenience or even to greater absurdities than do certain other rules.

As a second axiom it may be stated that, according to the spirit of the law of priority, *the historical method should be adhered to in case the type can not be determined upon basis of the first publication.* Thus, if any author has determined a type for a genus without previously determined type, such determination holds unless it can be shown that it is objectively erroneous.

RULES AND RECOMMENDATIONS CONCERNING TYPES.

In the following discussion, the rules and recommendations formulated for determining types of genera are based upon the practices now in existence and upon our own experience. It is not maintained that the points discussed cover all cases or that all points exclude a difference of opinion. It is, however, believed that the suggestions made are more in detail than are those usually found in existing codes, and it is hoped that they will be of use either in stimulating further study on the subject, or in serving as a guide to those systematists who have heretofore paid little or no attention to the subject discussed.

A. GENERA FOR WHICH TYPES ARE DESIGNATED OR IMPLIED IN THE ORIGINAL PUBLICATION.

Too much stress can not be laid upon selecting the type on basis of the original publication. The further one goes from this publication in selecting the type, the more complicated the case usually becomes.

1. GENERA ORIGINALLY PUBLISHED WITH ONLY ONE SPECIES. "MONOTYPICAL GENERA."

RULE.—A genus proposed with a single original species takes that species as type.

Thus, *X-us* 1890, proposed with only one species, *albus* 1890, retains *albus* as type, regardless of the number and history of the species which may later be assigned to *X-us* and regardless of the subdivisions which *X-us* may later undergo.

This is the most simple case which can arise, and the principle involved is so self-evident that it needs no argument. It is fully in accord with the practices of systematists in different groups, both in zoology and botany, so far as these workers have endeavored to follow nomenclatural codes, and it is the logical ruling in accordance with the canons of all codes.

Fortunately a considerable number of genera in all major groups come under this rule. In the generic names given in the present list, about 240 are absolutely and irrevocably tied to a single original specific name by reason of their original publication with a single species.

Genera of this kind are frequently referred to as "*monotypical*." Such designation is not entirely free from criticism, since a genus originally published with several species, one of which was definitely designated as type, is also in a certain sense a monotypical genus.

The following monotypical genera come within the province of this paper:

List of genera (chiefly nematodes) originally published with a single species.

<i>Acanthocheilonema</i> Cobbold, 1870b (<i>dracunculoides</i>).	<i>Amblyonema</i> Linstow, 1898 (<i>terdentatum</i>).
<i>Acanthocheilus</i> Molin, 1858 (<i>quadridentatus</i>).	<i>Ancyracanthopsis</i> Diesing, 1861a (<i>bilabiata</i>).
<i>Acanthosoma</i> Mayer, 1844 (<i>chrysalis</i>).	<i>Ancyracanthus</i> Diesing, 1838a, 1839a (<i>pectinatus</i> = <i>pinnatifidus</i>).
<i>Acanthrus</i> Acharius, 1780 (<i>sipunculoides</i>).	<i>Ancyrocephalus</i> Creplin, 1839a (<i>paradozus</i>).
<i>Acrobeles</i> Linstow, 1877 (<i>ciliatus</i>).	<i>Anguillina</i> Hammerschmidt, 1838 (<i>monilis</i>).
<i>Agchylostoma</i> Dubini, 1843a (<i>duodenale</i>).	<i>Aphanolaimus</i> de Man, 1880 (<i>attentus</i>).
<i>Agriostomum</i> Railliet, 1902 (<i>vryburgi</i>).	<i>Apororhynchus</i> Shipley, 1899 (<i>hemignathi</i>).
<i>Allantonema</i> Leuckart, 1884 (<i>mirabile</i>).	<i>Aprocta</i> Linstow, 1883 (<i>cylindrica</i>).
<i>Allodapa</i> Diesing, 1861a (<i>typica</i> = <i>alodapa</i>).	<i>Aræolaimoides</i> de Man, 1893 (<i>microphthalmus</i>).
<i>Alloionema</i> Schneider, 1859 (<i>appendiculatum</i>).	

List of genera (chiefly nematodes) originally published with a single species—Continued.

- Arhynchus* Shipley, 1896 (*hemignathi*).
Ascaroides Barthélemy, 1858a (*limacis*).
Ascarophis van Beneden, 1871a (*mor-rhuæ*).
Ascarops van Beneden, 1873b (*minuta*).
Asconema Leuckart, 1886 (*gibbosum*).
Aspidocephalus Diesing, 1851a (*scoleciformis*).
Atractis Dujardin, 1845a (*dactyluris*).
Atractonema Leuckart, 1887 (*gibbosum*).
Aulolaimus de Man, 1880 (*oxycephalus*).
Autoplectus Balsamo-Crivelli, 1843b (*pro-tognostus*).
Bastiania de Man, 1876 (*gracilis*).
Bathylaimus Cobb, 1894c (*australis*).
Brachynema Cobb, 1893a (*obtusa*).
Brady-nema zur Strassen, 1892 (*rigidum*).
Calyptronema Marion, 1870 (*paradoxum*).
Camacolaimus de Man, 1889 (*tardus*).
Carnoya Gilson, 1898 (*vitiensis*).
Cephalonema Cobb, 1893a (*longicauda*).
Ceratospira Schneider, 1866 (*vesiculosa*).
Chaetosoma Claparède, 1863a (*ophicephalum*).
Chaolaimus Cobb, 1893a (*pellucidus*).
Characostomum Railliet, 1902 (*longemucronatum*).
Choanolaimus de Man, 1880 (*psammophilus*).
Chordodes Creplin, 1847b (*parasitus*).
Cloacina Linstow, 1898 (*dahl*).
Conocephalus Diesing, 1861a (*typicus*).
Cosmocephalus Molin, 1858, etc. (*diesingii*).
Crino Lamarck, 1801 (*truncatus*).
Ctenocephalus Linstow, 1904 (*tiara*).
Cyathostoma E. Blanchard, 1849a (*lari*).
Cyathostomum Molin, 1861 (*tetracanthum*).
Cylicolaimus de Man, 1889 (*magnus*).
Cystidicola Fischer, 1798 (*farionis*).
Cystocephalus Railliet, 1895 (*mucronatus*).
Dactylius Curling, 1839a (*aculeatus*).
Deletrocephalus Diesing, 1851a (*dimidiatus*).
Demonema Cobb, 1894c (*rapax*).
Deontolaimus de Man, 1880 (*papillatus*).
Dermatoxys Schneider, 1860 (*religera*).
Dermofilaria Rivolta, 1884 (*irritans*).
Desmolaimus de Man, 1880 (*zeelandicus*).
Desmoscolex Claparède, 1863a (*minutus*).
Dicelis Dujardin, 1845 (*filaria*).
Diceras Rudolphi, 1810a (*rude*).
Dicyema Kœlliker, 1849 (*paradoxum*).
Dikentrocephalus Wedl, 1855 (*crinalis*).
Diectophyme Collet-Meygret, 1802a (*renale*).
Diphtherophora de Man, 1880 (*communis*).
Diplogaster Max Schultz, 1857 (*micans*).
Diplostaimus Linstow, 1876 (*gracilis*).
Dipodium Bosc, 1812a (*apiarium*).
Discophora Villot, 1875 (*cirratus*).
Ditrachyceros Hermann, 1801 [*rude*].
Dolicholaimus de Man, 1888 (*marioni*).
Dracunculus "Kniphof, 1759," or Gal-landat, 1773 (*medinensis*).
Dyacanthus Stiebel, 1817 (*polypephalus*).
Echinonema Linstow, 1898 (*cinctus*).
Elaphocephalus Molin, 1860 (*octocornutus*).
Enchelidium Ehrenberg, 1836 (*marinum*).
Enoplotaimus de Man, 1893 (*vulgaris*).
Epithelphusa Drago, 1887 (*catanensis*).
Ethmolaimus de Man, 1880 (*pratensis*).
Eucamptus Dujardin, 1845a (*obtusus*).
Fictitium Diesing, 1851a (*cephalopodium*).
Filarina Hammerschmidt, 1838 (*vitrea*).
Filaroides van Beneden, 1858a or 1861a (*mustelarum*).
Filocapsularia Deslongchamps, 1824q (*communis*).
Fimbria Cobb, 1894c (*tenuis*).
Fimbrilla Cobb, 1905 (*tenuis*).
Furia Linnaeus, 1758 (*infernalis*).
Globocephalus Molin, 1861 (*longemucronatus*).
Gnathostoma Owen, 1836 (*spinigerum*).
Graphonema Cobb, 1898d (*vulgaris*).
Gyalocephalus Looss, 1900 (*capitatus*).
Habronema Diesing, 1861c (*musæ*).
Hæmonchus Cobb, 1898a (*contortus*).
Hæruca Gmelin, 1790 (*muris*).
Halalaimus de Man, 1880 (*gracilis*).
Halichoanolaimus de Man, 1886 (*robustus*).
Hamularia Treutler, 1793 (*lymphatica*).
Hedruris Nitzsch, 1821 (*androphora*).
Heligmus Dujardin, 1845 (*longicirrus*).
Hemipsilus Quatrefages, 1846 (species unnamed, Quatrefages, 1846, 131-132).
Heterocephalus Marion, 1870 (*laticollis*).
Heterocheilus Diesing, 1839 (*tunicatus*).
Heth Cobb, 1898a (*juli*).
Histiostongylus Molin, 1861 (*coronatus*).
Hoplocephalus Linstow, 1898 (*cinctus*).
Hydromermis Corti, 1902 (*ricicola*).
Hystrichis Dujardin, 1845a (*tricolor*).

List of genera (chiefly nematodes) originally published with a single species—Continued.

- Hystriognathus* Leidy, 1850 (*rigidus*).
Ironus Bastian, 1865 (*ignavus*).
Isakis Lespès, 1856 (*migrans*).
Koleops Lockwood, 1872 (*anguilla*).
Labiduris Schneider, 1866 (*gulosus*).
Lasiomitus Marion, 1870 (*exilis*).
Lecanocephalus Diesing, 1839 (*spinulosus*).
Leiuris Leuckart, 1850 (*leptocephalus*).
Lepidonema Cobb, 1898a (*bifurcata*).
Leptodera Dujardin, 1845a (*flexilis*).
Leptoderes Dujardin, 1845a (*flexilis*).
Leptolaimus de Man, 1876 (*papilliger*).
Lepturis Schlotthauber, 1860 (*curvula*).
Liniscus Dujardin, 1845a (*exilis*).
Lissonema Linstow, 1903 (*rotundatum*).
Litosoma van Beneden, 1873 (*filaria*).
Lobocephalus Diesing, 1838 (*heterolobus*).
Lombricoides Mérat, 1821 (*vulgaris*).
Macrolaimus Maupas, 1900 (*crucis*).
Macroposthonia de Man, 1880 (*annulata*).
Macrogonus Zeder, 1800 (*hominis* = *trichura*).
Meloidogyne Gældi, "1887" or 1889 (*exigua*).
Mermis Dujardin, 1842 (*nigrescens*).
Microlaimus de Man, 1880 (*globiceps*).
Mitrephephorus Linstow, 1877 (*hæmisphaericus*).
Mitrephephorus Linstow, 1877 (*hæmisphaericus*).
Myenchus Schuberg & Schröder, 1904 (*bothryophorus*).
Myzomimus Stiles, 1892 (*scutatus*).
Necator Stiles, 1903 (*americana*).
Necticonema Marion, 1870 (*prinzi*).
Nectonema Verrill, 1879 (*agilis*).
Nema Leidy, 1856 (*racilans*).
Neomermis Linstow, 1904 (*macrolaimus*).
Neonchus Cobb, 1893 (*longicauda*).
Nervus Laporte, 1792 (*medinensis*).
Netrohrhynchus Zenker, 1827 (*blainvillii*).
Odontobius Roussel, 1834 (*ceti*).
Odontolaimus de Man, 1880 (*chlorurus*).
Odontophora Buetschli, 1874 (*marina*).
Œsophagodontus Railliet & Henry, 1902 (*robustus*).
Ollulanus Leuckart, 1865 (*tricuspis*).
Onchocerca Diesing, 1841 (*reticulata*).
Oncholaimellus de Man, 1890 (*calvadosicus*).
Oncophora Diesing, 1851a (*neglecta*).
Oxyx Cobb, 1891 (*perfectus*).
Oxyxema Linstow, 1899 (*rectum*).
Oxystoma Buetschli, 1874 (*elongata*).
Oxyuris Rudolphi, 1803 (*curcula* = *equi*).
Ozolaimus Dujardin, 1845a (*megatyphlon*).
Paragordius Montgomery, 1898 (*varius*).
Passalurus Dujardin, 1845a (*ambiguus*).
Pelagonema Cobb, 1894 (*simplex*).
Pelodytes Schneider, 1860 (*strongyloides*).
Peritrachelius Diesing, 1851a (*insignis*).
Phacelura Hemprich & Ehrenberg, 1828 (*paludinæ*).
Pharyx Leuckart, 1848 (*alatus*).
Pharyngodon Diesing, 1861a (*acanthurus*).
Physocephalus Diesing, 1861 (*sexalata*).
Piguris Schlotthauber, 1860 (*reticulata*).
Platycoma Cobb, 1894 (*cephalata*).
Polydelphis Dujardin, 1845a (*anoura*).
Potamonema Leidy, 1856 (*nitidum*).
Prionoderma Rudolphi, 1810 (*ascaroides*).
Prothelmis Linstow, 1888 (*profundissima*).
Pseudalius Dujardin, 1845a (*filum*).
Pseudonymus Diesing, 1857 (*spirotheca*).
Pseudorhabditis Perroncito, 1881 (*stercoralis*).
Pterocephalus Linstow, 1899 (*viviparus*).
Pterygodermatites Wedl, 1861 (*plagiostoma*).
Ptychocephalus Diesing, 1861 (*spirotheca*).
Ramphogordius Rathke, 1843 (*lacteus*).
Rhabdogaster Metschnikoff, 1867 (*cygnoides*).
Rhabdonema Leuckart, 1883 (*nigrovenosa*).
Rhabdotoderma Marion, 1870 (*morstatti*).
Rhigonema Cobb, 1898 (*brevicollis*).
Rhytis Mayer, 1835 (*paradoxa*).
Rictularia Frœlich, 1802a (*cristata*).
Sabatieria de Rouville, 1903 (*cettensis*).
Schizocheilonema Diesing, 1861 (*megalochilum*).
Sclerotrichum Rudolphi, 1819 (*echinatus*).
Simondsia Cobbold, 1864 (*paradoxa*).
Siphonolaimus de Man, 1893 (*niger*).
Solenolaimus Cobb, 1894 (*obtusus*).
Sphaerolaimus Bastian, 1865 (*hirsutus*).
Sphaerularia Dufour, 1837a (*bombi*).
Spinifer Linstow, 1901 (*fulleborni*).
Spinilectus Fourment, 1884 (*oriflagellis*).
Spiropterina van Beneden, "1858a," 1861a (*coronata*).
Spiroxys Schneider, 1866 (*contorta*).
Stelmus Dujardin, 1845a (*præcinctus*).
Stenodes Dujardin, 1845a (*acus*).
Stenurus Dujardin, 1845a (*inflexus*).

List of genera (chiefly nematodes) originally published with a single species—Continued.

- | | |
|---|---|
| <i>Stephanurus</i> Diesing, 1839a (<i>dentatus</i>). | <i>Thalassironus</i> de Man, 1889 (<i>britannicus</i>). |
| <i>Stomachida</i> Pereboom, 1780 (<i>vermis</i>). | <i>Thalassolaimus</i> de Man, 1893 (<i>tardus</i>). |
| <i>Streptogaster</i> Cobb, 1898 (<i>papillatus</i>). | <i>Thelandros</i> Wedl, 1862 (<i>alatus</i>). |
| <i>Streptostoma</i> Leidy, 1849 (<i>agile</i>). | <i>Thelastoma</i> Leidy, 1849 (<i>attenuatum</i>). |
| <i>Strongylacantha</i> van Beneden, 1873 (<i>gly-cirrhiza</i>). | <i>Thelazia</i> Bosc, 1819 (<i>rhodesii</i>). |
| <i>Strongyloides</i> Grassi, 1879 (<i>intestinalis</i> = <i>stercoralis</i>). | <i>Trefusia</i> de Man, 1893 (<i>longicauda</i>). |
| <i>Strongylus</i> Mueller, "1780," 1784 (<i>equinus</i>). | <i>Tricheilonema</i> Diesing, 1861a (<i>megalochila</i>). |
| <i>Subulura</i> Molin, 1860 (<i>acutissima</i>). | <i>Trichina</i> Owen, 1835 (<i>spiralis</i>). |
| <i>Syngamus</i> Siebold, 1836 (<i>trachealis</i>). | <i>Trichinella</i> Railliet, 1895 (<i>spiralis</i>). |
| <i>Synaenema</i> Magalhães, 1905 (<i>fragile</i>). | <i>Trichoderma</i> Greef, 1869 (<i>oxycaudata</i>). |
| <i>Synplecta</i> Leidy, 1851 (<i>pendula</i>). | <i>Trichodes</i> Linstow, 1874 (<i>crassicauda</i>). |
| <i>Syringolaimus</i> de Man, 1888 (<i>striatocaudatus</i>). | <i>Trichonema</i> Cobbold, 1874 (<i>arcuata</i>). |
| <i>Tachygonetria</i> Wedl, 1862 (<i>vivipara</i>). | <i>Trichuris</i> Røderer & Wagler, 1761, 1762 (<i>trichiura</i>). |
| <i>Tanqua</i> R. Blanchard, 1904 (<i>tiara</i>). | <i>Tricoma</i> Cobb, 1894 (<i>cincta</i>). |
| <i>Teratocephalus</i> de Man, 1876 (<i>terrestris</i>). | <i>Tropidocerca</i> Diesing, 1851a (<i>paradoxa</i>). |
| <i>Terschellingia</i> de Man, 1888 (<i>communis</i>). | <i>Tropisurus</i> Diesing, 1835 (<i>paradoxus</i>). |
| <i>Tetracheilonema</i> Diesing, 1861a (<i>quadrilabiatum</i>). | <i>Tylolaimophorus</i> de Man, 1880 (<i>typicus</i>). |
| <i>Tetradenos</i> Linstow, 1904 (<i>tiara</i>). | <i>Tylopharynx</i> de Man, 1876 (<i>striata</i>). |
| <i>Tetrameres</i> Creplin, 1846 (<i>paradoxus</i>). | <i>Uracanthus</i> Diesing, 1861 (<i>brevispinosus</i>). |
| | <i>Urolabes</i> Carter, 1858 (<i>palustris</i>). |
| | <i>Vena</i> Gallandat, 1773a (<i>medinensis</i>). |
| | <i>Xyo</i> Cobb, 1898 (<i>histrix</i>). |

Despite the self-evident character of the principle involved, a few genera of this category have later come to be used in a sense entirely different from that in which they were originally intended, as indicated by reference to the type. The explanation of this is clear. Authors have placed additional species in a given genus of this kind; then the species have later been distributed in two or more genera, and the original species has been transferred to some other than the original generic name. As an example of this kind among the nematodes, *Strongylus* may be mentioned. It is clear that this species was originally (Mueller, 1780, pl. 42, figs. 1-12) based upon *Strongylus equinus*. It is true that in his text Mueller later (1784, 8) says "Congenerem valde similem claris. Otto Fabricius in intestinis ouium nuper reperit," but the species (*S. ovinus*) in question can not come into consideration as type of *Strongylus*, for not only does *S. ovinus* not appear to have been described or figured in 1780, but it is clear that Mueller based his genus upon *S. equinus*. Other species were afterwards added to *Strongylus*, and Rudolphi (1809a, 35), in suggesting a division of *Strongylus*, placed both *S. equinus* and *S. ovinus* in the *Sclerostoma* group, thus indicating a transfer of *Strongylus* s. st. to the newer forms, for which, by the way, another generic name (*Uncinaria*) was at that time known to Rudolphi to be available. De Blainville (1828a) carried out Rudolphi's suggestion, definitely separating the two genera, and the generic name *Strongylus* is now generally used for a group of

worms—namely, for the *Strongylus contortus* group (see *Hæmonchus*)—which is allied to but quite different from the original type.

In cases of this kind the policy to be followed seems not to admit of any hesitation. One should immediately revert to the original type, returning *S. equinus* to the genus *Strongylus*.

Such action will probably not meet with the approval of those who oppose the Law of Priority, but consistency certainly demands a uniform application of the principle involved.

2. GENERA ORIGINALLY PUBLISHED WITH ONLY ONE VALID SPECIES, BUT ALSO WITH ONE OR MORE SPECIES INQUIRENDÆ.

In several cases authors have published a genus with only one species which they recognized as valid, but they have added to the genus one or more species which they looked upon as *species inquirendæ*. Two views might be advanced regarding such cases:

First, it might be maintained that since the author was in doubt regarding the validity of certain species, but not regarding one species, he must have had the one valid species especially in mind in proposing the genus, while the insertion of the doubtful species was an afterthought. Such an interpretation would very probably cover the majority of cases, but circumstances can be imagined which would call for a modification of this view. Thus, an author might notice some variation in certain specimens which might lead him to the view that these possibly represented a species distinct from the one he recognized as valid. This second species might, however, contain all the characters he considered as generic and as found in the valid species. In this case the doubtful species might be, in his eyes, just as important, viewed from the generic standpoint, as the valid species. Cases of this kind, however, would probably represent exceptions.

Second, it might be maintained by authors who attach very great importance to "elimination" that if any author selected the *valid* species (from standpoint of the original author of the genus) as type of a new genus, or transferred it to another genus, the type of the old genus would have to be selected from the species inquirendæ.

Personally we prefer the first interpretation, and would suggest the general adoption of the following:

RULE.—The type of a genus (containing from the standpoint of its author both valid and doubtful species) must never be selected from any species which the original author of genus clearly designated as *species inquirendæ* at the time of the publication of the genus.

NEMATODE GENERA OF THIS CLASS.

The following genera in this paper come under the class now under discussion:

Cosmocerca Diesing, 1861a, 645; type by present designation, *ornata*.

ornata considered valid by Diesing, 1861a, 645.

commutata given as species inquirenda by Diesing, 1861a, 645.

- Echinocephalus* Molin, 1858, 154; type by present designation, *uncinatus*.
uncinatus considered valid by Molin, 1858, 154.
cygni given as species inquirenda by Molin, 1858, 154.
Proleptus Dujardin, 1845a, 105; type by present designation, *acutus*.
acutus Dujardin, 1845a, 105; only positive species.
obtusus Dujardin, 1845a, 105; given by Dujardin as doubtful.
Thominx Dujardin, 1845a, 22-23; type by present designation, *manica*.
manica Dujardin, 1845a, 22-23; only positive species.
tridens Dujardin, 1845a, 22-23; given as doubtful.

Cases of this kind should not be confused with cases like *Strongylus*, where the genus was distinctly based upon one species, described, discussed, and in some cases figured, but where the author incidentally mentioned that some one found another (unnamed, undescribed, and unfigured) congeneric species.

In addition to the ruling on the four genera given above, it may be mentioned that in all four cases, page precedence, if adopted, would call for the same four species, respectively, as type; further, *Cosmocerca* is a doubtful homonym; *uncinatus* could also be construed as type by virtual tautonymy. It is possible that *Thominx* should be considered as a case under the rule of doubtfully referred species (*tridens*) instead of species inquirendæ.

3. GENERA ORIGINALLY PUBLISHED WITH A SPECIES DEFINITELY DESIGNATED AS TYPE (TYPE BY ORIGINAL DESIGNATION).

RULE.—When in the original publication of a genus one of the species is definitely designated as type, this species should be accepted as type, regardless of any other considerations.

Thus, genus *X-us*, 1890, originally published with the following species:

- albus*, 1890, specifically designated as type.
niger, 1885, type of genus *Y-us*, 1885.
flavidus, 1890, type of *Z-us*, 1900.
minutus, 1880, not known to be a type.
radiatus, 1875, doubtful species.

If an author definitely designates a given species as type, he selects a form which expresses his standard of reference for the genus. If any other species is subsequently selected as standard of reference, such selection is theoretically equivalent to the proposition of a new genus, which may or may not be considered identical with the original genus. Practically, the second selection is therefore, in many cases, at least, the proposition of a stillborn homonym; in other cases it involves an erroneous quotation of the original author's intentions. It is clear, therefore, that the acceptance of the originally designated type is in accordance with the law of priority.

Unfortunately, comparatively few of the earlier authors foresaw the necessity of definitely designating types, and to this lack of fore-

sight we may ascribe much of the confusion in nomenclature which has arisen. Helminthologists in general laid little stress upon type species prior to the publication (1898) of the "Inventory of the genera of the trematode family Fasciolidae." Blanchard in particular should be mentioned as preeminent among helminthologists to insist upon the importance of type species (see particularly his writings on nomenclature), while even such eminent men as Rudolphi, Dujardin, Diesing, Molin, Leuckart, and others paid little or no attention to this important part of the generic diagnosis.

ROUNDWORM GENERA WITH TYPES BY ORIGINAL DESIGNATION.

Exclusive of those cases where an author has intentionally renamed a monotypical genus (to which other species may later have been added), and exclusive of the cases where the specific name *typicus* or *typus* has been used, there are only about ten instances in roundworm genera in which the author of a genus (originally containing several species) has definitely determined a type by original designation, namely:

Anoplostoma Buetschli, 1874b (*viviparum*).
Bunostomum Railliet, 1902 (*trigonocephalum*).
Desmodora de Man, 1889 (*communis*).
Euchromadora de Man, 1886 (*vulgaris*).
Gongylonema Molin, 1857 (*minimum*).

Heterakis Dujardin, 1845a (*resicularis*).
Leptosomatum Bastian, 1865 (*elongatum*).
Monoposthia de Man, 1889 (*costata*).
Neoechinorhynchus Hamann, 1905 (*claviceps*).
Stenolaimus Marion, 1870 (*lepturus*).

In connection with the genera whose types were determined by original designation, it may be well to note the following hypothetical case as example of instances which are not uncommon:

X-us, 1890, with the species *albus*, 1890, type by original designation.

Let us assume that Dr. A, in 1895, suppresses *X-us* as a synonym of *Y-us*, 1885, type *niger*. If later Dr. B, in 1900, separates *X. albus* generically from *Y. niger*, reinstituting the genus *X-us*, *albus* must of course remain the type of *X-us*. This ruling is in accord with various codes, and appears to have been first formulated in the B. A. Code (see above, p. 14).

Other cases, slightly more complicated, will be referred to under another section.

4. TYPE BY ORIGINAL IMPLICATION THROUGH USE OF THE SPECIFIC NAME *typicus* OR *typus*.

RULE.—If in the original publication of a genus, *typicus* or *typus* is used as a new specific name for one of the species, such use shall be construed as "type by original designation."

The canon here formulated agrees, so far as we have been able to discover, with the customs adopted by systematists both in zoology and botany. Its adoption will probably meet with general approval.

The following cases of this kind occur among nematode genera:

NEMATODE GENERA WITH TYPE DETERMINED BY USE OF SPECIFIC NAME *typicus*.

Allodapa Diesing, 1861 (*typica*=*allodapa*); also monotypical; also type by absolute tautonymy.

Conocephalus Diesing, 1861 (*typicus*); also monotypical.

Dipeltis Cobb, 1891 (*typicus*); also type by original intention of the author (personal letter).

Tylolaimophorus de Man, 1880; also monotypical.

Incidentally it may be noticed that *Allodapa*, *Conocephalus*, and *Tylolaimophorus* are monotypical, hence no other species could be taken as types of these genera; further, *typica*=*allodapa* would be type by absolute tautonymy.

Dipeltis represents an interesting case; it contained

minor, new species, which would be type if "page precedence" were adopted blindly;

*cirrhatu*s which is type of *Discophora*, 1875 (monotypical, and homonym [1836]); and

typicus construed as type by original designation. In this case, accordingly, the last not the first species is type.

There is a further justification (if such were considered necessary) for selecting *typicus* as type of *Dipeltis*. Suppose *cirrhatu*s were taken as type by inclusion; we should then have a species of *Dipeltis* (which should be used instead of *Discophora*, 1875, preoccupied in 1836) with the name *typicus* yet not type of the genus, and this might lead to later confusion. The same would apply if *minor* were selected on the basis of page precedence.

It can not be said that this method of indicating a type (by naming a species *typicus*) is free from criticism, since it is likely to give rise to confusion in future changes of classification. Thus, *Conocephalus typicus*, 1861, has been placed in the genus *Ascaris* and is now *Ascaris typica*, yet it is not the type of the genus *Ascaris*, 1758.

Although, according to the Law of Priority, the name *typicus* must hold (other things being equal) for the many species for which it has been proposed, it will be well to avoid its use for new species in the future. Hence the

RECOMMENDATION.—It is well to avoid the introduction of the names *typicus* or *typus* as new names for species or subspecies, since such names are always liable to result in later confusion.

For the specific names *communis*, *medicinalis*, *officinalis*, and *vulgaris*, see p. 64.

5. TYPE BY ABSOLUTE TAUTONYMY.

RULE.—If a genus, without designated type, contains among its original species one possessing the generic name as its specific or subspecific name, either as valid name or synonym, that species or subspecies becomes ipso facto type of the genus.

Thus, let the genus *X-us*, 1890, without designated type, contain the species *albus*, *niger*, and *x-us*. The species *x-us* becomes type of *X-us* by absolute tautonymy.

There seem to be few principles in nomenclature which are inherently more sensible than this one. Further, this canon corresponds with the historic development of not an inconsiderable number of generic names. Many groups originally recognized as of specific value by earlier authors have been elevated to generic rank and the original specific name has been taken as the generic name. *Mephitis mephitis*, *Putorius putorius*, and *Trutta trutta*, represent familiar examples. Among the trematodes, *Heterophyes heterophyes*, is known. In these combinations, the words *putorius*, *trutta*, and *heterophyes*, in addition to being specific names, practically mean *Putorius* par excellence, *Trutta* par excellence, *Heterophyes* par excellence, which expressions carry with them the idea of "type species."

As other cases of this kind may be mentioned: *Anhinga anhinga*, *Bison bison*, *Buteo buteo*, *Cardinalis cardinalis*, *Coturnix coturnix*, *Crex crex*, *Glis glis*, *Gulo gulo*, *Histrionicus histrionicus*, *Lutra lutra*, *Meles meles*, etc.

Many earlier authors were opposed to tautonymic names, and on this account a new specific name was introduced when an old specific name was raised to generic rank. Thus, Cobbold was evidently influenced by this opposition, enunciated in the Stricklandian Code, when he changed the name *Distoma heterophyes* to *Heterophyes ægyptiaca*. Diesing, wishing to recognize a distinct genus for *Oxyuris allodapa*, was evidently influenced by the same view when he named the genus *Allodapa*, adopting *typica* as specific name.

While Cobbold was opposed to tautonymy, he did not follow the rule of the Stricklandian Code as to the manner in which tautonymy should be avoided.

In later years, tautonymy is admitted as permissible, and some authors, in fact, deliberately proposed tautonymic combinations. It certainly has its advantages. Personally we strongly favor the intentional formation of tautonyms, as such combinations aid in recalling the type species.

It seems that the principle of type by tautonymy must have been in the minds of the framers of the B. A. Code when they wrote: "A specific name, or its synonyms, will also often serve to point out the particular species which by implication must be regarded as the original type of the genus." It was definitely formulated in the German and English recommendations of the Committee's report on the International Code (see above, pp. 15, 23). It has also been formally adopted by a number of prominent systematists (see Science, N. Y., n. s., v. 16, 114-115, July 18, 1902), particularly in vertebrate zoology. We unreservedly declare in favor of its consistent adoption.

CASES OF TYPE BY ABSOLUTE TAUTONOMY.

The following cases, mentioned in this paper, may be taken as examples of "type by absolute tautonymy:"

Allodapa Diesing, 1861 (*typica* Diesing, 1861 = *allodapa* Creplin, 1853, renamed); also monotypical; also type by use of name *typicus*.

Angiostoma Dujardin, 1845a (*limacis*, 1845 = *angiostoma*, 1866); also type by designation of Schneider, 1866, 148.

Anguillula Mueller, 1786 (*glutinis*, 1783 = *anguillula*, 1773, renamed = *redivivum*, 1758, renamed); Bastian, 1865c, 110, has designated *A. aceti* as type of *Anguillula*; see special discussion below, p. 34.

Anthuris Rudolphi, 1819 (*anthuris*); see special discussion, p. 48.

Capsularia Zeder, 1800 (*salaris*, 1790, renamed *capsularia*, 1802; *halecis*, 1790, renamed *capsularia*, 1802; page precedence calls for *salaris* = *capsularia*).

Chaos Linnaeus, 1767 (*chaos*, 1758 = *protheus*, 1767).

Cystidicola Fischer, 1798 (*farionis*, 1798 = *cystidicola*, 1801); also monotypical.

Of the special nematode cases cited above, no author can possibly object to the ruling on *Allodapa* and *Cystidicola*, since *allodapa* is type also because of use of the word *typica* and since *Allodapa* and *Cystidicola* are monotypical.

Doubts may, however, arise in the minds of some authors as to *Angiostoma*, *Anguillula*, *Capsularia*, and *Chaos*; hence a discussion of these cases seems advisable.

CASE OF *Angiostoma* DUJARDIN, 1845.

Angiostoma was proposed with two species, *entomelas* and *limacis*. Schneider (1866, 157) referred *limacis* to *Leptodera* as *L. angiostoma*, thus giving an implied case of absolute tautonymy, on basis of which we should rule that *limacis* is type of *Angiostoma*. Schneider (1866, 148) also appears to have designated *limacis* as type of *Angiostoma*, for he says: "* * * zwei von Dujardin zuerst beschriebene Species, deren jede bei ihm zugleich eine Gattung vertritt, * * *, *Leptodera flexilis* und *Angiostoma limacis* * * *." Accordingly, *limacis* would seem to be type by Schneider's designation as well as by absolute tautonymy.

CASE OF *Anguillula* MUELLER, 1786.

The case of *Anguillula* is somewhat complicated. The name *Vibrio anguillula* was proposed by Mueller, 1773, to contain certain worms found "in glutine farinoso et alibi vulgarissimum." Later *anguillula* was divided, was discarded as a *specific* name, and reintroduced as a generic name; *anguillula* thus being raised to generic rank, *Anguillula*, the species *anguillula* becomes type by absolute tautonymy of the generic name *Anguillula*. The history of the species *anguillula* is, therefore, the important factor in determining the present (restricted) form which should serve as type.

Mueller, 1773, included *Chaos redivivum* Linnæus, 1767, 1326 (which was proposed for certain worms "in aceto et glutine bibliopegorum"), in the synonymy of *Vibrio anguillula*; hence *anguillula*, 1773, equals *redivivum*, 1767, renamed, and was therefore not justified; accordingly the form to which *anguillula*, 1773, becomes confined should take *redivivum* as its specific name, and *anguillula* should fall into synonymy.

In 1774, Goeze advanced the view that the vinegar eel (*aceti*, 1783) was distinct from the Kleister eel (*glutinis*, 1783), but he does not appear to have named the species. Mueller (1776, 281) indicated concurrence in Goeze's view, and later (1783, 161-163) recognized four species, namely:

Vibrio fluvialis (the "Anguille vulgaire" of Rozier, 1775);

V. aceti (the "anguille du vinaigre" = vinegar eel);

V. glutinis (the "Kleisterelchen," to which Mueller now confined *Chaos redivivum* Linnæus, 1767 = *Vibrio anguillula* Mueller, 1773 [see above]); and

V. marinus.

From the facts as thus far given it is clear that *glutinis*, 1783, is the lineal descendant of *anguillula*, 1773, seu *redivivum*, 1767.

The next work of importance is Mueller, 1786, 63 (*Animalcula Infusoria*), which is not accessible to us. According to Gmelin (1790a, 3900-3901) and Sherborn (1902, 1077), *Anguillula* was proposed by Mueller, 1786, 63, with four species, namely:

Anguillula "O. F. Mueller, 1786, 63."

aceti (Mueller, 1783) Mueller, 1786, 63 [(=*Chaos redivivum* Linnæus, 1767, 1326, in part) = (*Vibrio anguillula* Mueller, 1773, 41, in part) = *Vibrio aceti* Mueller, 1783; to *Gordius* by Oken, 1815, 191; to *Rhabditis* by Dujardin, 1845; to *Anguillula* by Diesing, 1851; type of *Anguillula* by Bastian, 1865c, 110].

fluvialis Mueller, 1786, 65 [= *Vibrio fluvialis* Mueller, 1783, 161].

glutinis (Mueller, 1783) Mueller, 1786, 64 [= *Vibrio anguillula* Mueller, 1773, 41, renamed = *Chaos redivivum* Linnæus, 1767, renamed (the latter definitely confined to *glutinis* by Mueller, 1783, 162) = *Vibrio glutinis* Mueller, 1783, 162; to *Gordius* by Oken, 1815, 191; to *Rhabditis* by Dujardin, 1845].

marina (Mueller, 1783) Mueller, 1786, 163 [= *Vibrio marinus* Mueller, 1783, 163; as type of *Enchelidium* by Ehrenberg, 1836. See also under *Enchelidium* and *Pontonema* in Bastian, 1865c, 140, 174].

In *Anguillula* Mueller, 1786, there is a species *glutinis*, 1783, with *anguillula*, 1773, as synonym, hence (see above) *anguillula*, 1773, is type by tautonymy of *Anguillula*, 1786; but as *anguillula*, 1773, equals *redivivum*, 1767, renamed, this latter name, in its emended sense—namely, as equal to *glutinis*, 1783—should stand as type species of *Anguillula*, 1786. The correct name for the "Kleisterelchen" is thus seen to be *Anguillula rediviva* (Linnæus, 1767) Stiles & Hassall, 1905.

Later authors have overlooked the fact that Mueller's own writings definitely fixed the type of *Anguillula*, as will be seen from the following complications which have arisen:

Oken (1815) transferred *aceti* and *glutinis* to *Gordius*, leaving *fluviatilis* and *marina* as the remaining original species of *Anguillula*, and since *marina* is type of *Enchelidium*, 1836, *fluviatilis*, 1786 (equals *fluviialis*, 1783), ought to have been taken as type (by elimination) of *Anguillula* by any author who overlooked the facts given above relative to *glutinis*.

In 1828, Hemprich & Ehrenberg proposed *Anguillula* as a new genus, to contain the following species:

Anguillula Hemprich & Ehrenberg, 1828, Phytozoa entozoa, not paged, as new genus, containing 5 species:

fluviatilis (Mueller, 1786) Hemprich & Ehrenberg, 1828, pl. 2, figs. 8, 13. ♂ ♀

Includes *Vibrio fluvialis* Mueller, 1783.

inflexa Hemprich & Ehrenberg, 1828, pl. 1, fig. 12. Includes *Vibrio niloticus*.

coluber (Mueller, 1786) Hemprich & Ehrenberg, 1828. Sexes not given.

Includes *Vibrio coluber* Mueller.

recticauda Hemprich & Ehrenberg, 1828. Sexes not given.

dongalana Hemprich & Ehrenberg, 1828, pl. 1, fig. 13.

Later, in discussing *Vibrio*, Ehrenberg (1838a, 82-83) gave the following species of *Vibrio* as members of the genus *Anguillula*:

Anguillula aceti, including *Vibrio aceti*.

A. glutinis, including *Vibrio glutinis*; *V. ministerialis* given as possible synonym.

A. fluviatilis, including *Vibrio anguillula*, *V. fluvialis*, and *V. lacustris*.

Vibrio agrostris Steinbuch.

V. dongalanus.

V. tritici Steinbuch.

Dujardin (1845a, 239) pointed out that *Anguillula* Hemprich & Ehrenberg, 1828a, differed in material characters from *aceti* and *glutinis*. He preserved *Enchelidium* Ehrenberg, 1836, for *Anguillula marina*; he also retained *Anguillula* for the five species mentioned by Hemprich & Ehrenberg, 1828a; and he proposed *Rhabditis* to contain *R. terricola* (designated type by Bastian), *R. aceti* (*Vibrio aceti*), *R. tritici*, all of which he examined, and *R. glutinis* (*Vibrio glutinis* equals *Anguillula rediviva* [type of *Anguillula*, 1786]), which he does not state that he had examined, and which he was not aware was a type.

Thus, from our point of view, Dujardin used *Anguillula* in an incorrect sense, namely, not in accordance with Mueller's writings. Further, his *Rhabditis*, 1845, contained the type (*glutinis*) of an earlier genus, and under ordinary circumstances this would be "type by inclusion" for *Rhabditis*; but under the circumstances it is perhaps best to accept Bastian's interpretation that *terricola* is type of *Rhabditis*. (See p. 45.)

Diesing (1851a) returned *aceti*, *glutinis*, and *tritici* [as *graminearum*] to *Anguillula*, while he placed *terricola* in *Angiostomum*, thus eliminating all of the species from *Rhabditis* which Dujardin had placed in this genus.

Bastian (1865c, 110) definitely designated *aceti* as type of *Anguillula* "since this appears to have been so regarded by Ehrenberg." Bastian's reasoning in this case meets with the serious objection, however, that *aceti* was not one of the original species of *Anguillula* new genus Hemprich & Ehrenberg, 1828; hence, that it could not under any circumstances be type of "*Anguillula* Ehrenberg." Bastian further includes in "*Anguillula* Ehrenberg" *A. glutinis* (which he was unable to examine); also *A. fluviatilis*, which he looks upon as an "altogether doubtful animal," which "may perhaps belong to the genus *Plectus*;" and several other species.

According to Minot, "the true name of the vinegar eel is *Leptodera oxyphila*, but most authors still call them *Anguillula aceti*. * * *

The same worm apparently appears in fermenting starch paste, although the starch worm has received a different specific name, *L. glutinis*."

Authors differ in opinion regarding the identity of *aceti* and *glutinis*. If they are specifically identical, then our interpretation of *glutinis* as type of *Anguillula*, 1786, amounts to practically the same (from a systematic point of view) as Bastian's interpretation that *aceti* is type of "*Anguillula* Ehrenberg," although he and we have argued upon different premises; if *aceti* and *glutinis* are not specifically identical, but are so closely allied that authors are in doubt as to their exact status, then they will probably be at least congeneric, and our interpretation that *glutinis* is type of *Anguillula*, 1786, will not materially alter the present classification so far as these two species are concerned.

CASE OF *Capsularia* ZEDER, 1800.

Capsularia is a much less complicated case. It was proposed with two species—*salaris* and *halecis*. In 1802, Rudolphi renamed both of these species *capsularia*, placing the first in *Ascaris*, the second in *Filaria*. The choice is therefore open to select either as type of *Capsularia*, and on basis of page precedence, *salaris* may be taken as type. This also agrees with elimination, as *halecis* was afterward (1824) placed (in part) in *Fillocapsularia communis*.

It may be noted that in the case of *Anguillula* the specific name existed before the generic name was used; in fact, the species was raised to generic rank. In *Capsularia* and *Angiostoma* the generic names were later reduced to specific rank. *Cystidicola* also represents a case in which the generic name was later reduced to specific rank.

CASE OF *Chaos* LINNÆUS, 1767.

Volvox chaos Linnæus (1758a, 821; 1760, 821) was based directly upon Ræsel's (1755) *Der kleine Proteus* (Insecten-Belustigung, Nürnberg, v. 3, 622-624, pl. 101, figs. A-T), with the diagnosis "*V[olvox]* polymorpho-mutabilis. Habitat in aquis dulcibus. Forma propria destitutus omnes anomalas assumens et citissime immutans, Proteo incostantior." In 1767, *chaos* was raised to generic rank, as follows:

Chaos Linnæus, 1767, 1326, with five species:

redivivum Linnæus, 1767, renamed *Vibrio anguillula*, 1773, confined to *Anguillula glutinis*, 1783 = type of *Anguillula*, 1786.

protheus Linnæus, 1767 (*Volvox chaos*, 1758, renamed, and specifically based upon Ræsel's, 1755, *Der kleine Proteus*, pl. 101, figs. A-T, and *Lederm.*, micr., 88, f. 48; with the diagnosis "*C[haos]* gelatinosum polymorphomutabile. Habitat in aquis dulcibus. Figura propria determinataque nulla, assumens citissime figuras millenas anomalas" = type of *Amiba*, 1822.

fungorum Linnæus, 1767.

ustilago Linnæus, 1767.

infusorium Linnæus, 1767.

It is clear that the original specific name *chaos*, 1758, was raised to generic rank, *Chaos*, 1767, and the new Linnæan specific name *protheus*, 1767 (= *proteus* Pallas, 1766), introduced. Here we have a clear case of type by absolute tautonymy, the correct name being *Chaos chaos* [!].

Amiba Bory, 1822a (later changed to *Amæba* Ehrenberg, 1830a, and still later changed to *Ameba*), was proposed with the same species (= *Chaos chaos*) as type: "Le type du genre est le Protée de Mueller, que ce savant forma d'un animalcule découvert par Ræsel."

In a recent discussion on nomenclature one author has referred to the possibility of reviving the generic name *Chaos*, and from the context of his article it would appear that he would not approve of such a course upon the premises then known to him. The premises as given in the foregoing, however, were probably unknown to him.

This generic name is here unhesitatingly revived, both as generic and specific. It has as clear a standing in nomenclature as has any name ever used by Linnæus; it was based upon the same species as *Amiba*, *Amæba*, or *Ameba*, and no one who does not object to *Amiba*, *Amæba*, or *Ameba* can logically object to *Chaos* as generic name; no one who does not object to *proteus* or *protheus* can logically object to *chaos* as specific name.

A storm of objection because of this action can easily be foreseen, but there need be no fear for the ultimate adoption of *Chaos chaos*. This case will afford excellent material for sarcastic criticism on the part of authors who disapprove of consistency in nomenclatural matters.

If any author objects on principle to type by absolute tautonymy, he might interpret *Chaos* in either of two other ways:

First, he might rule by page precedence that *redivivum* is the type. In this instance he would have to take *Chaos*, 1767, into consideration as competitive with *Anguillula*, 1786; or

Second, he might rule by elimination that since *redivivum* has been transferred to *Anguillula* and since *protheus* = *chaos* is type of *Amiba*, the type of *Chaos* should be selected from *fungorum*, *ustilago*, and *infusorium*. See, however, the Linnæan rule, p. 64.

6. TYPE BY VIRTUAL TAUTONOMY.

RECOMMENDATION.—If a genus, without designated type, contains among its original species one possessing as specific or subspecific name, either as valid name or synonym, a name which is virtually the same as the generic name, or of the same origin or same meaning, preference should be shown to that species in designating the type, unless such preference is strongly contraindicated by other factors.

Under type by *absolute* tautonymy are here classified such cases in which the generic and specific names are *literatim* identical. Under type by *virtual* tautonymy are here included those cases in which the specific name is taken as basis for the generic name, or vice versa.

It must be admitted that the latter cases are not always entirely free from individual interpretation, but the following cases mentioned in this paper seem to admit of no doubt:

Capillaria Zeder, 1800; *capillaris* Rudolphi, 1809.

Trichuris Röederer & Wagler, 1761; *trichiura* Linnæus, 1771; also monotypical.

Viscosia de Man, 1890; *viscosus* Bastian, 1865 [de Man has written us that he based the name *Viscosia* upon the name *viscosus* and that the latter should be taken as type of the former].

Next comes a class of cases in regard to which it seems to us equally clear what should be done, but opinion will doubtless differ among various authors. Reference is made to cases in which two different words with identical or practically identical meaning are used as generic and specific names. Such cases are often the result of a dislike on the part of many authors to the use of tautonymic combinations. Two instances of this class occur in the present paper.

Echinocephalus Molin, 1858; *uncinatus* Molin, 1858; also type because it is the only original valid species, see p. 29.

Heterocheilus Diesing, 1839; *heterolobus* Diesing, 1838=*tunicatus* Diesing, 1839; also monotypical.

As there are other grounds besides virtual tautonymy for selecting *uncinatus* and *heterolobus* as types of *Echinocephalus* and *Heterocheilus*, respectively, no author can validly object to using virtual tautonymy as *additional* reason for such selection.

As other instances of what are considered type by virtual tautonymy, may be mentioned: *Bos taurus*, *Sphærostoma globiporum*, *Capra hircus*, *Equus caballus*, *Ovis aries*, *Scomber scombrus*, *Sus scrofa*, or *Sus porcus*.

"Type by absolute tautonymy" we accept as a rigid rule; "type by virtual tautonymy" we accept at present as a recommendation, to be followed unless strongly contraindicated.

As instances in which "type by virtual tautonymy" seems to be strongly contraindicated, the following may be mentioned:

Dipetalonema Diesing, 1861a. This generic name is clearly based upon the specific name *Filaria dipetala* Molin, 1858. Of this species, however, only the male was known, and unfortunately only a single specimen.

Dicheilonema Diesing, 1861a, equals subsection *Dicheilostomi*, 1851, represents another case in which type by virtual tautonymy (*bilabiata*) is contraindicated, because of lack of details concerning this species.

Dacnitis Dujardin, 1845a, seems open to doubt. The species *esuriens* might be interpreted as a case of virtual tautonymy, but the genus included *Pleurorhynchus*, 1786, and Dujardin knew that he was proposing a new name for a group for which he was aware that an older generic name was, from his point of view, available. Unless it is interpreted that *esuriens* represents an indication of type (see Dujardin, 1845a, 268, 270) by virtual tautonymy, it would be our view that *sphærocephala* is type by inclusion.

7. TYPES OF RENAMED GENERA.

RULE.—In case a generic name, without designated type, is proposed as a substitute for another generic name, with or without type, the type of either when established becomes ipso facto type of the other.

It occasionally occurs that an author uses two names for the same genus in the same paper. One of these may be used in the list of genera, the other in the list of species. In some cases it is evident that, for one cause or another, he intentionally introduced a second name; in others it is only evident that the two names are used in identically the same sense. No objection seems possible in these cases to interpreting the genera as representing identical groups, and as they are absolute synonyms, they should take the same type. As cases of this kind, mentioned in this paper, the following may be cited:

Anthuris Rudolphi, 1819a, and *Spiroptera* Rudolphi, 1819a.

Enoplus Dujardin, 1845a, 230, 233, 653, and *Tricontus* Dujardin, 1845a, 3, 653.

Hærucula Pallas, 1760, 1768, and *Tæniola* Pallas, 1760, 1768.

Laphyctes Dujardin, 1845a, 3, 653, and *Rictularia* Frølich, 1802, see Dujardin, 1845a, 280, 653.

Leptoderes Dujardin, 1845a, 2, 653, and *Leptodera* Dujardin, 1845a, 108, 653.

Rhabditis Dujardin, 1845a, 239, 653, and *Tribactis* Dujardin, 1845a, 3, 653.

Schizoeilonema Diesing, 1861a, 621, 710, and *Tricheilonema* Diesing, 1861a, 710.

In some instances an author has published a genus and has republished it under another name in the same or in a later paper, with or without additional species; for example:

- Arynchus* Shipley, 1896 [not Dejean, 1834], renamed *Apororhynchus* Shipley, 1899.
Asconema Leuckart, 1886, renamed *Atractonema* Leuckart, 1887, because of *Askonema* Kent, 1870.
Cephalonema Cobb, 1893 [not Stimps., ante 1882], renamed *Nanonema* Cobb, 1905.
Ctenocephalus Linstow, 1904 [not Kol., 1857], renamed *Tetradenos* Linstow, 1904.
Cystocephalus Railliet, 1895 [not Léger, 1892], renamed *Characostomum* Railliet, 1902.
Fimbria Cobb, 1894 [not Bohadsch, 1761], renamed *Fimbrilla* Cobb, 1905.
Hoplocephalus Linstow, 1898 [not Cuvier, 1829], renamed *Echimonema* Linstow, 1898.
Lobocephalus Diesing, 1838, renamed *Heterocheilus* Diesing, 1839.
Neorhynchus Hamann, 1892 [not Sclater, 1869], renamed *Neoechinorhynchus* Hamann, 1905.
Pelodytes Schneider, 1860 [not Fitz., ante 1846], renamed *Pelodera* Schneider, 1866.
Pseudonymus Diesing, 1857, renamed *Ptychocephalus* Diesing, 1861.
Triodontus Looss, 1900 [not Westwood, 1845], renamed *Triodontophorus* Looss, 1902.
Tropisurus Diesing, 1835, renamed *Tropidocerca* Diesing, 1851.

The question as to whether the author placed additional species in the genus in the second paper might influence some systematists in judging the case, though it is difficult to see how this factor comes into consideration.

In still other cases it is not the original author but a later writer who has intentionally renamed the genus, as

- Acuaria* Bremser, 1811, renamed *Anthuris* and *Spiroptera* Rudolphi, 1819.
Ascaris Linnaeus, 1758, renamed *Fusaria* Zeder, 1800.
Capillaria Zeder, 1800, renamed *Trichosoma* Rudolphi, 1819.
Ctenocephalus Linstow, 1904, renamed *Tanqua* R. Blanchard, 1904.
Cyathostomum Molin, 1861, renamed *Cylichnostomum* Looss, 1902.
Diocophyme Collet-Meygret, 1802, renamed *Eustrongylus* Diesing, 1851.
Globocephalus Molin, 1861, renamed *Cystocephalus* Railliet, 1895.
Gnathostoma Owen, 1836, renamed *Cheiracanthus* Diesing, 1838, 1839.
Hamularia Treutler, 1793, renamed *Tentacularia* Zeder, 1800.
Herodera Schmidt, 1871, renamed *Heterobolbus* Railliet, 1896.
Rhabdonema Leuckart, 1883, renamed *Rhabdias* Stiles & Hassall, 1905.
Spiromoura Leidy, 1856, renamed *Spirura* Diesing, 1861.
Trichina Owen, 1835, renamed *Trichinella* Railliet, 1895.
Trichodes Linstow, 1874, renamed *Trichosomoides* Railliet, 1895.
Trichuris Røderer & Wagler, 1761, renamed *Trichocephalus* Goeze, 1782, *Trichocephalus* Schrank, 1788, and *Mastigodes* Zeder, 1800.
Tropisurus Diesing, 1835, renamed *Tetrameres* Creplin, 1846.

All of the cases cited under renamed genera, together with certain other cases, may be interpreted under the head of type by inclusion.

8. TYPE BY INCLUSION.

RULE.—If an author proposes a genus, without designating a type, and includes among the original species [i. e., the valid species from his standpoint] the determined type of an earlier genus, such type becomes ipso facto the type of the new genus.

Thus, let *X-us*, 1890, proposed without designation of a type, include the following species:

albus, 1890, new species.

niger, 1885, type of *Y-us*, 1885; type of *X-us* by inclusion.

In discussing this proposition with systematists, we find a wide difference of opinion. Some workers consider it altogether too extreme; others consider it inherently just.

The general idea of type by inclusion seems to have been first suggested but not distinctly formulated in the Stricklandian Code (see above p. 14 "for if the later includes the type of the earlier genus, it would be canceled by the operation of § 4").

The cases which come under consideration in this connection naturally fall into several groups.

In regard to the cases first to be mentioned the types are or may be definitely determined by other principles as well as by inclusion:

Characostomum Railliet, 1902, 109; monotypical, and *mucronatum* is in addition type by original designation; *Characostomum*=*Globocephalus* (monotypical; *mucronatum*) and *Cystocephalus* (monotypical; *mucronatum*) renamed. Thus, *Characostomum* contains the type of two earlier monotypical names, and it is itself monotypical and in addition has its type determined by original designation.

Cylichnostomum Looss, 1902, 86; type *tetracanthum*; *Cylichnostomum* is a new name proposed for *Cyathostomum*, which is monotypical (*tetracanthus*).

Cystocephalus Railliet, 1895; type *longemucronatus*; also monotypical and equals a monotypical genus, *Globocephalus*, renamed.

Echinonema Linstow, 1898; type *cinctum*; monotypical and equals a monotypical genus, *Hoplocephalus*, renamed.

Fimbrilla Cobb, 1905; monotypical and is proposed as new name for *Fimbria*, which is also monotypical.

Heterocheilus Diesing, 1839; type *tunicatus*=*heterolobus*; monotypical and equals a monotypical genus, *Lobocephalus*, renamed; also type by virtual tautonymy.

Laphytes Dujardin, 1845a; type *cristata*; monotypical and equals a monotypical genus, *Rictularia*, renamed.

Lepturis Schlotthauber, 1860; type *curvula*; monotypical; the only species is type of an earlier monotypical genus, *Oxyuris*.

Mastigodes Zeder, 1800; type *hominis*=*trichiura*; *Mastigodes* was distinctly proposed as new name for an earlier, monotypical genus, *Trichuris*.

Pelodera Schneider, 1866; type *strongyloides*; *Pelodera* equals the monotypical genus *Pelodytes* Schneider, 1860 [not Fitz., ante 1846], renamed; *strongyloides* would be type by page precedence also.

Pseudorhabditis Perroncito, 1881; type *stercoralis*; monotypical, the only species being type of an earlier monotypical genus, *Strongyloides*, 1879.

Ptychocephalus Diesing, 1861; type *spirotheca*; monotypical; also equals an earlier monotypical genus, *Pseudonymus*, 1851, renamed.

Tanqua R. Blanchard, 1904; monotypical; also equals an earlier monotypical genus renamed.

Tentacularia Zeder, 1800; type *subcompressa*, 1803 = *lymphatica*, 1793, renamed; *Tentacularia* was given as a new name for the monotypical genus *Hamularia*, 1793; in 1803, Zeder added a second species; *subcompressa* would also be type if page precedence were followed.

Tetrameres Creplin, 1846 = the monotypical genus *Tropisurus* Diesing, 1835, renamed. *Trichinella* Railliet, 1895; type *spiralis*; monotypical and further equals a monotypical genus *Trichina*, 1835 [not 1830], renamed.

Trichocephalos Goeze, 1782; type *trichiura*; *Trichocephalos* is an earlier monotypical genus *Trichuris*, 1761, renamed; the whipworm of man would also be type by page precedence.

Trichosomoides Railliet, 1895; type *crassicauda*; this is a new name for the monotypical genus *Trichodes*, 1874 [not 1782].

Tropidocerca Diesing, 1851; type *paradoxa*; this is a new name for the monotypical *Tropisurus*, 1835 [not 1824], and *Tetrameres*, 1846; and is itself monotypical.

Slightly more complicated cases may next be given:

Cochlus Zeder, 1803, is a new name which Zeder proposed for *Gæzia*, 1800, because Rudolphi objected to naming worms after men. It is clear, therefore, that *Cochlus*, 1803, equals *Gæzia* deliberately renamed, hence the type of *Gæzia* should be taken as the type of *Cochlus*. Neither genus is monotypical, nor was a type originally designated. In 1800, Zeder mentioned two species: [*Cucullanus ascaroides* Goeze, 1782] examined by Zeder. Rudolphi 1801, 57, named it *Gæzia armata*.

Gæzia inermis Zeder, 1800, examined by Zeder. Rudolphi, 1801, transferred this species to *Liorhynchus*; Zeder, 1803, transferred it back to *Cochlus*.

If page precedence were followed, *armata* would be type of *Gæzia*; and if elimination were followed strictly, *armata* would be type by elimination in 1801. Zeder, 1800a, 98, says: "Da nun der Gæze'sche Rundwurm [*armata*] aus dem Welse mit mehreren Eingeweidewürmern von verschiedenen Gattungen verwandt zu sehn scheint, ohne jedoch die charakteristischen Kennzeichen einer Gattung ganz zu tragen; so nahm ich um so weniger Anstand ihn in einer eigenen Gattung aufzustellen, indem mein verehrungswürdiger Lehrer Herr Prof. Schrank [1788, 98] schon lange hiezuhin Winke gegeben hat. Und diesen Schritt rechtfertigt gewiss eine Entdeckung, welche ich im vorigen Jahre gemacht habe."

From this quotation it seems clear that it was *armata* which came into prime consideration in establishing *Gæzia*, and since, further, such an interpretation agrees with page priority, and in 1801 with elimination, we construe *armata* as type of *Gæzia*; since, now, *Cochlus* is simply a new generic name for *Gæzia* we construe the same species as type of *Cochlus*.

Nematoxys Schneider, 1866, contained the same two species (and no other) which were the two and only original species of the genus *Cosmocerca*, 1861. No valid objection can therefore arise to the ruling that *Nematoxys*, 1866, is identical with *Cosmocerca*, 1861. In both cases, if page precedence were followed, *ornata* would be type. As Diesing, 1861a, gave *commutata* as species inquirenda, it would appear that *ornata* should be taken as type of *Cosmocerca*. Having now two

identical genera, one of which has a natural type, we see no possible objection to ruling that *ornata* is type of *Nematoxys* by inclusion. For the possibility of designating *commutata* as type, see under *Sclerostoma*, page 44.

Sclerostoma Rudolphi, 1809, was a subdivision of *Strongylus*, containing two species of *Strongylus*, namely:

equinus, which is type of the monotypical genus *Strongylus*, and, if page precedence were followed, type of *Sclerostoma*.

dentatus, which was transferred to *Esophagostomum* by Molin, 1861, where it has since remained and of which we have in this paper designated it as type.

According to the present status, *equinus* might be type of *Sclerostoma* either by page precedence or by elimination, and the principle of type by inclusion gives the same result.

In the case of *Nematoxys*, cited above, some authors might be inclined to argue that since *ornata* is type of *Cosmocerca*, *commutata* should be taken as type of *Nematoxys*. If this same argument were applied to *Sclerostoma*, and *dentatus* made its type, then the present *Esophagostomum* would have to be revised, since *Æ. dentatum* would be type of an earlier genus. It is thus seen that the principle of type by inclusion settles the case in a less complicated manner.

Spirura Diesing, 1861a, contains all of the original species (and no other) of *Spiroonoura*; it is distinctly a deliberate renaming of *Spiroonoura*, and the two genera being absolutely identical it can work no hardship to rule that whatever type is selected for *Spiroonoura* should also serve as type of *Spirura*. If page precedence were followed, *gracile* would be type in both cases. If *Spirura* is interpreted as an emendation of *Spiroonoura*, no question can arise against selecting the same species as type of both genera.

We now come to several still more complicated cases:

Cheiracanthus Diesing, 1838, 1839, contained two species:

robustus Diesing, for which Diesing gave *Gnathostoma hispidum* as probable synonym (*Gnathostoma* is monotypical).

gracilis Diesing.

In this case Diesing knew that he was renaming an earlier monotypical genus; considering *robustus* and *hispidum* as probably identical specifically, he had no grounds for considering that *Cheiracanthus* was not congeneric with *Gnathostoma*. Page precedence, if followed, would make *robustus* type of *Cheiracanthus*. To rule that *robustus* is type by inclusion seems more satisfactory, since it sets a stamp of disapproval upon such unjustified renaming of preexisting genera.

Dochmius Dujardin, 1845a, represents a case somewhat similar to *Dispharagus*. Dujardin was well aware of the existence of *Uncinaria*, 1789, with two species, *melis* and *vulpis*, both of which he included in *Dochmius*. Dujardin's proposition of a new name was therefore a deliberate renaming of an earlier genus.

It can hardly be advanced against this view that Dujardin's *Dochmius* is essentially different from *Uncinaria*. Aside from *criniformis* [*melis* as synonym] and *trigonocephalus* [*vulpis* as synonym] of Dujardin, he included in this genus *D. ursi* which he gave as doubtfully distinct species, and as possibly identical with his *trigonocephalus*; *crassus*, of which he examined only the female; and *tubæformis* Zeder, for which he gave a description based upon his own study, but not containing any striking characters which would lead us to assume that it was because of this species that he rejected the name *Uncinaria*.

It was because of the inclusion of *melis* and *vulpis* in *Dochmius* that in 1899 (p. 164) we took *vulpis* as "type by inclusion" for *Dochmius*. For our reasons for taking *vulpis* as type of *Uncinaria*, see page 54.

Fissula Lamarck, 1801, 339, contained two species, namely, *intestinalis* (Bloch) and *cystidicola*; *cystidicola* (= *farionis*) was the type of an earlier monotypical genus.

Helicotherix Osman Galeb, 1878b, was proposed with four species: *spirotheca*, upon which two monotypical generic names (*Pseudonymus*, 1857, and *Ptychocephalus*, 1861) had already been based; *hydrophili*; *hydroi*; and *hydrobii*.

Ophiostoma Rudolphi, 1801, was proposed with the species *phocæ*, *globoicola*, *rajæ*, and *farionis* (*Cystidicola*) as positive and with *bifida* as probable member of the genus. In the same paper, Rudolphi (p. 62) declared in favor of priority in selecting generic names, but (p. 64) objected to names like *Cystidicola* based upon the habitat. *Ophiostoma*, accordingly, appears to be a clear case of renaming the earlier genus, hence should take the same type as the older genus. Later (1809, 124) Rudolphi considers *rajæ* and *globoicola* species dubiæ and unites (p. 119) *phocæ* and *bifida* under the name *dispar*, retaining *cystidicola* as valid species. If now objection is raised to making *cystidicola* "type by inclusion" of *Ophiostoma*, the only other ruling would be to select *phocæ* (female *dispar* in Rudolphi, 1809, 119). From the data stated, a ruling on the principle of type by inclusion seems to be the best method of proceeding.

Rhabditis Dujardin, 1845a, 239, was proposed with four species: *terricola*, *aceti*, *tritici*, and *glutinis* (type of *Anguillula*, 1786). From these species (see p. 134) it is seen that if page precedence were followed, *terricola* would be type of *Rhabditis*, and this ruling would agree with the action taken by Bastian, 1865c, who retained in *Rhabditis* only this one of Dujardin's original species; it would also agree with Railliet, 1893a. Diesing, 1851a, the first reviser after Dujardin, eliminated all of Dujardin's original species to other genera, thus totally suppressing *Rhabditis*. Gervais & van Beneden, 1859b, the next authors we have examined, mention by name only *aceti* as member of *Rhabditis*, transferring *tritici* to *Anguillulina*. If the principle of the "first reviser" after Diesing were followed, it would be questionable in the minds of some authors whether *aceti* could be designated as type

on basis of this publication, as it seems clear that the authors admitted other species to the genus. Bastian, 1865c, clearly took *terricola* as type of *Rhabditis*, as he eliminated *aceti* and *glutinis* to *Anguillula* and *tritici* to *Tylenchus*, and he further speaks of "the typical *Rhabditis terricola*" which probably refers to *terricola* as type. Schneider (1866,148) rejected the name *Rhabditis* on the ground that its relations to *Pelodera* and *Leptodera* were so complicated. His *P. teres* is interpreted by Railliet as synonymous with *R. terricola*; he eliminated *aceti* and *glutinis* to *Leptodera* and *tritici* to *Anguillula*.

Thus, if we try to settle the type of *Rhabditis* on the principle of elimination, the citation of Gervais & van Beneden might be interpreted as a designation of *aceti* as type, yet this interpretation is by no means free from objection. The exclusion of *tritici* from further consideration as type, on basis of Gervais & van Beneden, would also be open to question in the minds of some authors. If we adopt unreservedly the principle of type by later designation, as at present provided for by the International Code, Bastian's action of 1865 would settle the point that *terricola* is the type of *Rhabditis*; and as stated above, this ruling would agree with the ruling by page precedence.

Rhabditis is thus seen to be the first case in this discussion in connection with which the principle of "type by inclusion" is seriously contraindicated by existing rules; had Bastian not designated *terricola* as type, we would now designate *glutinis* as such on the ground of type by inclusion, but in view of Bastian's designation, type by inclusion is perhaps not admissible in this case. See axiom 2, p. 24.

Trichosoma Rudolphi, 1819a, 13, was deliberately proposed as a new name for *Capillaria*, 1800, and included both of the original species of *Capillaria*; both of these species have been retained in *Trichosoma* by Dujardin (1845a), Diesing (1851a, 1861a), and Stossich (1890). Neither of them appears to have been made the type of other genera, so that the principle of elimination does not seem to come into consideration. If the case is decided on page precedence, *brevicolle*, 1809, becomes type of *Trichosoma*. This species is *capillaris*, 1819, renamed, which is "type by virtual tautonymy" of *Capillaria*. It would also be "type by inclusion" of *Trichosoma*.

Triodontophorus Looss, 1902, is *Triodontus*, 1900 (not 1845), renamed, hence would take the same type; for neither genus was a type originally named, but Looss has since designated *serratus* as such.

Helminthologists, after studying the examples given above, will probably admit that the principle of type by inclusion is in accord with the general spirit of the Law of Priority. That it seems Draconian in some cases can not be denied, but it certainly greatly simplifies the method of determining types in not an inconsiderable number of genera and has the great advantage of permitting their determination on the basis of the original publication, thus reducing the number of

cases in which we must have recourse to the still less satisfactory method of "type by elimination."

It may be advanced against the principle of "type by inclusion" that the included type may be a little known or even an invalid species. If, however, the species was invalid from the standpoint of the author who included it in a later genus, or if he doubtfully referred it to his new genus, it would of course be excluded as type; if on the contrary it was simply a slightly known form, and he still unreservedly included it among his valid species, without showing that he did not consider this species as type, the case still represents a renaming of an earlier genus.

It seems quite clear that a "type by original designation" (see p. 30) should take precedence over a "type by inclusion," since the former is intentional and results from a desire to conform to the rules of nomenclature, while the latter is either an accident or due to ignoring the rules of nomenclature. Accordingly we might have the following case:

X-us, 1890, containing
albus, 1890, type by original designation, and
niger, 1885, type of *Y-us*, 1885.

In this case an author who would go so far as to explicitly designate *albus* as type would probably have adopted *Y-us* if available had he known of its existence and that *niger* was its type. It seems but just, therefore, to bind *X-us* to *albus*, to stand or fall according to the later history of *albus*, not only from the point of view that the author of *X-us* has complied with the requirements of the case, but because of the fact that by such designation the author of *X-us* has explicitly stated that he considered *albus* the standard of reference of *X-us*. Thus a case of this kind would come under the principle enunciated under type by original designation, page 30.

9. GENERA CONTAINING TYPES OF SEVERAL EARLIER GENERA.

RULE.—If a genus without a designated type contains types of two or more earlier genera, the type of the new genus is to be selected from the contained types (the case being the same as a genus with two or more species, according to the number of types in question), unless it can be shown that such procedure is directly contraindicated by the original author's intentions.

Under this heading may be cited one of the most unnecessary renamings of genera that is known in helminthology.

Prosthecosacter Diesing, 1851a, contained four species, three of which were known to Diesing to contain the types of three monotypical genera:

inflexus contained as synonym *filum*, type of the monotypical genus *Pseudalius*, 1845; cited by Diesing.
minor contained as synonym *inflexus*, type of the monotypical genus *Stenurus*, 1845; cited by Diesing.
convolutus.
alatus, type of the monotypical genus *Pharurus*, 1848; cited by Diesing.

Possibly some authors would argue that *convolutus*, as the only remaining species, not a type, should be selected as type of *Prosthecosacter*. Not the faintest excuse, however, can be advanced for the generic name *Prosthecosacter*. Either *Pharurus*, *Pseudalius*, or *Stenurus* should have been used by Diesing, regardless of the correctness of his synonymy. We would suggest *minor* as type of *Prosthecosacter*. If, now, *Stenurus*, 1845, is considered invalid because of *Stenura*, 1834 (see p. 75), *Prosthecosacter* can be used in its place.

CASE OF *Acuaria*, *Spiroptera*, *Anthuris*, AND *Dispharagus*.

The genera *Acuaria* Bremser, 1811a, *Spiroptera* Rudolphi, 1819a, *Anthuris* Rudolphi, 1819a, and *Dispharagus* Dujardin, 1845a, present a very complicated case of nomenclature and should be considered together, since their histories are so intimately connected:

Acuaria was proposed by Bremser, 1811a, 26, with the following short diagnosis: "Vermis teres, elasticus, utrinque attenuatus. Ore papilloso." He did not give any specific names to the 14 supposed species he found, but he gave the hosts in which they occur. These species are:

1=*Spiroptera anthuris* Rudolphi, 1819a, 25, ♂ ♀, reported by Bremser from *Corvus*, *Coracias garrula*, and *Oriolus galbula*. It was taken as basis for the genus *Anthuris* Rudolphi, 1819a, 244, of which it is type by absolute tautonymy, and also clearly by Rudolphi's original intentions; *Anthuris* is clearly *Acuaria* renamed, as admitted by Rudolphi; hence by the rule proposed on page 40 it becomes type of *Acuaria*, which it would also be in case the ruling were made on basis of page precedence. *S. anthuris* also becomes type of *Spiroptera*, because *Spiroptera* is, as admitted by Rudolphi, a new name for *Acuaria* and *Anthuris*, and, being *Acuaria* and *Anthuris* renamed, it takes the same type (*anthuris*). *S. anthuris* was transferred to *Dispharagus* by Dujardin, 1845a, 75, of which it becomes the type by inclusion; see below, page 50. Diesing, 1851a, 215, returned *anthuris* to *Spiroptera*. Bremser's original material was reexamined by Schneider, 1866, 96, who eliminated the specimens from *Coracias garrula* as a new species, *Filaria capitellata*, expressed doubts as to the specimens from *Oriolus galbula*, and practically reduced the original material, as *Filaria anthuris*, to the specimens from *Corvus glandarius*, which now by elimination becomes the type host. Stossich, 1891, 88, retains *anthuris* in *Spiroptera*.

2=*Spiroptera euryoptera* Rudolphi, 1819a, 26. ♂ ♀. Hosts: *Lanius*. Retained in *Spiroptera* by Dujardin, 1845a, 97; Diesing, 1851a, 218; and Stossich, 1897, 97.

3=*Spiroptera attenuata* Rudolphi, 1819a, 25. ♂ ♀. Hosts: *Hirundo*. To *Dispharagus* by Dujardin, 1845a, 74, and Stossich, 1891, 93; to *Spiroptera* by Diesing, 1851a, 215; to *Filaria* by Schneider, 1866, 89.

4 and 5=*Spiroptera anthuris*; see 1.

6=*Spiroptera bidens* Rudolphi, 1819a, 24. ♂ ♀. Host: *Merops apiaster*. To *Dispharagus* by Dujardin, 1845a, 77, by conjecture; to *Ancyracanthus* by Schneider, 1866, 105.

7 to 9=*Spiroptera*, species inquirendæ in Rudolphi, 1819a, 28.

10=*Spiroptera revoluta* Rudolphi, 1819a, 26. ♂ ♀. Host: *Charadrius himantopus*. To *Dispharagus* by Molin, 1860, 492.

11 to 13=*Spiroptera*, species inquirendæ in Rudolphi, 1819a, 28-29.

14=*Spiroptera elongata* Rudolphi, 1819a, 26. ♀. Host: *Sterna nigra*. Retained in *Spiroptera* by Dujardin, 1845a, 102; Diesing, 1851a, 217; to *Filaria* by Schneider, 1866, 94; to *Dispharagus* by Stossich, 1891, 95.

Rudolphi (1819a, 22-29, 235-255) reexamined Bremser's original material, and although fully aware of the existence of *Acuaria*, which he even mentioned by name, he ignored the name and at first renamed the genus *Anthuris* (see below), but later changed his mind and again renamed it *Spiroptera*. Of the 14 original species of *Acuaria*, Rudolphi recognized 6 as valid, namely, *Acuaria* Nos. 1 (+ 4 + 5), 2, 3, 6, 10, and 14, while the remaining, namely, Nos. 7, 8, 9, 11, 12, and 13, he gave as doubtful. All helminthologists will probably admit that the type of *Acuaria* should be selected from the species which Rudolphi considered valid.

If the rule of page precedence were adopted, *anthuris* could be taken as a type of *Acuaria*, and if the indefinite process of elimination were followed, *Spiroptera euryoptera* would probably be type. We maintain, however, that *Anthuris* and *Spiroptera* should be examined to see what influence they have upon this point in possibly deciding the question in some other way. We had at first overlooked *Anthuris*, and thought that *S. euryoptera* would probably be type by elimination, and on basis of this provisional opinion Ransom (1904, p. 38) took it as probable type. Since then, however, it has been recognized that *Anthuris* had been overlooked, and an examination of this genus shows that the original provisional view referred to above must be modified.

Anthuris was published by Rudolphi, 1819a, 244, but not accepted by him. As the name was published, however, it exists and must be considered. This name, as shown by Rudolphi, was based upon *Spiroptera anthuris* and should be judged upon the rule of type by absolute tautonymy. *S. anthuris*, therefore, is here accepted as type of the genus *Anthuris*, and since *Anthuris* is, admittedly, *Acuaria* renamed, it is maintained on the basis of the rule proposed on p. 40 that *S. anthuris* becomes type of *Acuaria*.

In the same paper, Rudolphi (1819a, 22-29, 235-255) introduced the new generic name *Spiroptera*; this included the entire genus *Acuaria*, hence its type, *S. anthuris*, also the entire genus *Anthuris* with its type, *S. anthuris*, and the monotypical genus *Cystidicola*, hence its type *C. farionis*. In other words, Rudolphi united two preexisting genera (*Acuaria*, 1811, and *Cystidicola*, 1798) in a genus (*Spiroptera*) for which four generic names (*Acuaria*, 1811, *Anthuris*, 1819, *Cystidicola*, 1798, and *Fissula*, 1801) were available, and we hold (see p. 47) that the type of *Spiroptera* should be selected from the included types (*S. anthuris* and *C. farionis*). Further, since Rudolphi distinctly states that *Spiroptera* equals *Acuaria* renamed, the type of *Acuaria* (*anthuris*) becomes (see p. 40) the type of *Spiroptera*.

Dispharagus was proposed by Dujardin (1845a, 42, 69-82) with the following species:

- laticeps* (Rudolphi, 1819) Dujardin, 1845a, 71.
tenuis Dujardin, 1845a, 73. Species inquirenda in Stossich, 1891.
subula Dujardin, 1845a, 73-74. Species inquirenda in Stossich, 1891.
attenuatus (Rudolphi, 1819) Dujardin, 1845a, 74-75.
nasutus (Rudolphi, 1819) Dujardin, 1845a, 75.
anthuris (Rudolphi, 1819) Dujardin, 1845a, 75-77. Type of *Acuaria*, 1811, *Anthuris*, 1819, and *Spiroptera*, 1819.
truncatus (Creplin, 1825) Dujardin, 1845a, 77. To *Spiroptera* by Diesing, 1851, and Molin, 1860.
bidens (Rudolphi, 1819) Dujardin, 1845a, 77-78.
decorus Dujardin, 1845a, 78, pl. 3, fig. K. To *Histiocephalus*, 1851.
quadrilobus (Rudolphi, 1819) Dujardin, 1845a, 79.
laticaudata (Rudolphi, 1819) Dujardin, 1845a, 79. To *Histiocephalus*, 1851.
bicuspis (Rudolphi, 1819) Dujardin, 1845a, 79-80.
brevicaudatus Dujardin, 1845a, 80. To *Histiocephalus*, 1851. Species inquirenda in Stossich, 1891, and Molin, 1860, 500.
denudatus Dujardin, 1845a, 81, pl. 3, fig. G. To *Histiocephalus*, 1851.
cystidicola (Lamarck, 1801) Dujardin, 1845a, 81-82; = *Cystidicola* = *Fissula cystidicola* Bosc; = *Ophiostoma cystidicola* (Bosc) Rudolphi, 1809; = *Spiroptera cystidicola* (Bosc) Rudolphi, 1819.

Thus Dujardin deliberately introduced a new name (*Dispharagus*) for a genus for which he was perfectly aware there were two earlier names (*Cystidicola*, 1798, and *Fissula*, 1801) available; he also included in this group the type (*anthuris*) of a genus (*Anthuris*) which apparently he and all other helminthologists have overlooked. We maintain that the type of *Dispharagus* should be selected (p. 47) from the included types (*anthuris* and *cystidicola* = *farionis*), and since Dujardin (1845a, 69) had the gastric parasites of birds particularly in mind in proposing this genus, preference is here shown to *anthuris* over *farionis*.

It seems that the ruling here followed, of type by absolute tautonymy combined with the rules of type by inclusion, disposes of the generic names in question in a far more satisfactory manner than the indefinite method of type by elimination. The rule of absolute tautonymy is certainly inherently just, and once this is acknowledged, a rule is available which can be followed objectively; the rule of type by inclusion exists since 1846 (see p. 15) and is fully in harmony with the law of priority. A combination of the two rules in this case disposes of a very complicated combination of conditions which, ruled upon from other points of view open up numerous chances for differences of opinion. The type selected is one found in a common host and therefore not especially difficult to obtain; it further satisfies the rule of page precedence for authors who follow that rule. The possible objection that it disposes of two well-known generic names, *Spiroptera* and *Dispharagus*, is of less importance than at first appears, for neither of these genera is of very much importance in either human or veterinary

medicine, and even as used by zoologists these genera are very indefinite, while one of them is admitted by Railliet to be arbitrary.

In connection with the above discussion it might be well to examine *Dispharagus* from another point of view.

Dujardin (1845a, 71) distinctly states that he placed here by conjecture five species of *Spiroptera*, and all systematists will doubtless agree that none of these five species should come into consideration as type. He mentions (pp. 77-78) *bidens* as one of these, attributing the diagnosis to Rudolphi. He further attributes the diagnoses to Rudolphi in the case of *laticeps*, *quadrilobus*, *laticauda*, and *bicuspis*, none of which he appears to have examined. The conclusion seems justified, therefore, that these are the five conjectural species in question.

Dujardin (1845a, 72) fails to name three species he examined, namely, "Dispharage. du hobereau," "?Dispharage de l'épervier (B.)," and "?Dispharage de l'épervier (D);" and probably all systematists will agree in excluding these also from consideration as type.

Dujardin examined, named, and described as new: *tenuis* from *Saxicola rubetra*; *subula* from *Sylvia rubecula*; *decorus* from *Alcedo isipda*; *brevicaudatus* from the "butor;" and *denudatus* from *Cyprinus erythrophthalmus*. He also examined personally and classified as members of *Dispharagus* (without indicating any question in his mind as to the correctness of his generic determination): *attenuatus* (Rudolphi) from *Hirundo rustica* and *H. urbica*; *nasutus* (Rudolphi) from *Fringilla domestica*; *anthuris* (Rudolphi) from *Corvus glandarius*, *C. pica*, *C. frugilegus*, *Caryocatactes*, *Corvus corax*, *C. corone*, *C. cornix*, *Pyrrhocorax alpinus*, *Coracias garrula*, and *Oriolus galbula*; *truncatus* (Crepelin) from *Upupa epops*; and *cystidicola* (Bosc) from *Salmo fario* and *Salmo thymalus latus*.

It is interesting to note that if this case were ruled upon by page precedence, either *decorus*, *laticeps*, or *tenuis* might be selected, according to the different views of interpreting page precedence, although *laticeps* should certainly be ruled out, since the generic determination was only conjectural.

Thus, it is probable that in determining the type of *Dispharagus*, most authors would be inclined to select it from: *tenuis*, *subula*, *decorus*, *brevicaudatus*, *denudatus*, *attenuatus*, *nasutus*, *anthuris*, *truncatus*, and *cystidicola*. But of these ten species, two species (*anthuris* and *cystidicola*), or 20 per cent, are already types of genera, hence Dujardin united older genera, involving five available names, into a genus for which he proposed a new name; he was well aware of the fact that at least one of the species (*cystidicola*) was type of an earlier genus and he also knew that at least four of the five names were available. If, now, from his point of view, *Spiroptera* is transferred to another group, at least one type (*cystidicola*) with two generic names (*Cystidicola* and *Fissula*) were available for use; and in addition *Anthuris*

(probably overlooked by Dujardin) was also available. That *Dispharagus* had no *raison d'être* is therefore clear, and the least that can be done is to apply to it the Law of Priority, according to which Dujardin should have used *Cystidicola*, from his systematic point of view. He says, however, that "almost all of the species" which he unites in *Dispharagus* are "entre les tuniques de l'estomac ou du gésier des oiseaux," so that it is only fair to follow, if possible, the De Candolle principle (see below, p. 65) to confine *Dispharagus* to the greatest number of species possible. This would eliminate *Cystidicola* in favor of the *anthuris* group. But *anthuris* is the type of *Anthuris*, 1819, hence, *Anthuris* takes priority over *Dispharagus*, even from Dujardin's systematic point of view. One is therefore brought to the same point, but by a more indirect method, of suppressing *Dispharagus* in favor of *Anthuris*, and taking *anthuris* as type. *Anthuris*, however, is *Acuaria* renamed, and *Spiroptera* is also *Acuaria* renamed, hence, on basis of the type species, *Acuaria*, *Anthuris*, *Spiroptera*, and *Dispharagus* should all be synonyms.

This leaves the generic name *Cheilospirura* (type *hamulosa*, see p. 93) available for the species at present included by more recent authors (Stossich, 1891; Railliet, 1893) under *Dispharagus*.

Authors who do not accept "type by inclusion" should notice that Stossich (1891) in his revisions recognizes only five of Dujardin's species as valid members of this genus, namely, *anthuris*, *attenuatus*, *laticeps*, *nasutus*, and *quadrilobus*, and confines the genus to parasites from the gastroenteric region of birds. As *laticeps* and *quadrilobus* seem to have been placed here by conjecture, both of these should, if possible, be avoided as type. Accordingly, authors who reject "type by inclusion" would probably select either *anthuris*, *attenuatus*, or *nasutus* as type.

In most of the cases thus far mentioned under the nine headings (pp. 25-52), the type of the genus seems to us to be either clearly determined in one way or another in the original publication; or at least it is restricted to certain of the species. We now pass to

B. GENERA FOR WHICH TYPES HAVE BEEN SELECTED IN LATER PUBLICATIONS.

10. TYPE BY SUBSEQUENT DESIGNATION.

RULE.—If an author, in publishing a genus with more than one valid species, fails to designate or to indicate its type, any subsequent author may select the type, and such designation is not subject to change.

This canon is a logical corollary of the law of priority, but it is of course assumed that the second author has correctly selected as type some species which was available as such. If he has selected a species which was not available, his selection is not binding.

Distoma lanceolatum, for instance, has been designated by several authors as type of *Distoma*, but such designation can not hold, since *Distoma* is simply *Fasciola* renamed, and the type of *Fasciola* had already been established by elimination; furthermore, *lanceolatum* was not one of the original species of either *Fasciola* or *Distoma*, hence it was not available as type.

Uncinaria vulpis had been designated as type of *Uncinaria*, hence Looss's (1902) selection of *U. melis* as type is not to be accepted¹ unless he can show that the earlier designation of *U. vulpis* was inadmissible.

The view has been advanced by several authors that a writer in order to designate a type for an earlier genus must actually divide the genus. This view has not been generally accepted, nor is it one which can not be nullified at will, for any author can surely propose a typical subgenus and at that time determine the type.

In some cases the author of a genus has selected the type after the genus has been published. As original authors can best tell what particular species they had in mind in establishing their genera, probably all authors will agree to the following types:

ROUNDWORM GENERA WITH TYPES BY LATER DESIGNATION.

- Alaimus* de Man, 1880 (*primitivus* designated by de Man).
Anthraconema zur Strassen, 1904 (*weismanni* designated by zur Strassen).
Anticomus Bastian, 1865 (*eberthi* designated by Bastian), see p. 87.
Aphelenchus Bastian, 1865 (*avenæ* designated by Bastian), see p. 87.
Arzoolaimus de Man, 1888 (*bioculatus* designated by de Man).
Axonolaimus de Man, 1889 (*spinulosus* designated by de Man).
Cephalobus Bastian, 1865 (*persegnis* designated by Bastian), see p. 92.
Chromadora Bastian, 1865 (*vulgaris* designated by Bastian), see p. 94.
Chromagaster Cobb, 1894 (*purpurea* designated by Cobb).
Comesoma Bastian, 1865 (*vulgaris* designated by Bastian), see p. 95.
Cyatholaimus Bastian, 1865 (*ocellatus* designated by Bastian), see p. 97.
Cylindrolaimus de Man, 1880 (*communis* designated by de Man).
Gigantorhynchus Hamann, 1892 (*echinodiscus* designated by Hamann).
Hypodontolaimus de Man, 1886 (*inæqualis* designated by de Man).
Laxus Cobb, 1894 (*longus* designated by Cobb).
Linhomæus Bastian, 1865 (*hirsutus* designated by Bastian), see p. 116.
Monhystera Bastian, 1865 (*stagnalis* designated by Bastian), see p. 120.
Mononchus Bastian, 1865 (*truncatus* designated by Bastian), see p. 121.
Neoechinorhynchus Hamann, 1905 (*claviceps* designated by Hamann).
Neorhynchus Hamann, 1892 (*claviceps* designated by Hamann).
Parachordodes Camerano, 1897 (*tolosanus* designated by Camerano).
Paramermis von Linstow, 1898 (*crassa* designated by von Linstow).
Penzancia de Man, 1889 (*velox* designated by de Man).
Phanoderma Bastian, 1865 (*cocksii* designated by Bastian), see p. 129.
Plectus Bastian, 1865 (*parietinus* designated by Bastian), see p. 130.
Prismatolaimus de Man, 1880 (*intermedius* designated by de Man).
Rhabdolaimus de Man, 1880 (*terrestris* designated by de Man).
Spira Bastian, 1865 (*parasitifera* designated by Bastian), see p. 137.

¹ Looss also has recently accepted this view.

Symplocostoma Bastian, 1865 (*longicollis* designated by Bastian), see p. 140.

Synonchus Cobb, 1894 (*fasciculatus* designated by Cobb).

Tachyhodites Bastian, 1865 (*natans* designated by Bastian).

Trilobus Bastian, 1865 (*gracilis* designated by Bastian).

Triodontophorus Looss, 1902 (*serratus* designated by Looss).

Tripyla Bastian, 1865 (*glomerans* designated by Bastian).

Tripylodes de Man, 1886 (*vulgaris* designated by de Man).

Tylencholaimus de Man, 1876 (*mirabilis* designated by de Man).

Tylenchus Bastian, 1865 (*davainii* designated by Bastian).

Viscosia de Man, 1890 (*viscosus* designated by de Man), see p. 149.

Zoniolaimus Cobb, 1898 (*setifera* designated by Cobb).

In still other cases the type has been designated by other than the original author. Several of these cases it will be well to examine rather closely:

Acanthocephalus Kœlreuter, 1771a (*Echinorhynchus anguillæ* designated by Luehe, 1905, 329).

Angiostoma Dujardin, 1845 (*limacis* designated by Schneider), see p. 34.

Anisakis Dujardin, 1845, 220; type "*simplex*" misdet. = *dussumieri* designated by Stiles & Hassall, 1899, 103.

Anguillula Hemprich & Ehrenberg, 1828; *aceti* was designated as type by Bastian, 1865c, 110, but since this was not among the original species of *Anguillula* Ehrenberg [not Mueller], this designation can not hold. For fuller discussion of this case, see p. 34.

Cucullanus Mueller, 1777; *elegans* was designated as type by Dujardin, 1845a, 245. Mueller, 1777, is not accessible to us, and we find it somewhat difficult to judge this case from later literature.

Oncholaimus Dujardin, 1845; *attenuatus* has been designated as type by Bastian, 1865c, 100, and de Man, 1886, 9. This is a rather complicated case, involving the principle of elimination and can best be discussed under that head. See p. 62.

Paragordius Camerano, 1897; *varius* is the only species of *Paragordius* Montgomery, proposed independently as a new genus. This may also be interpreted as designation of type for *Paragordius* Camerano.

Uncinaria Frœlich, 1789; *vulpis* was designated as type by Stiles & Hassall, 1899, 164; *melis* was designated as type by Looss, 1902.

Our reasons for designating *vulpis* as type of *Uncinaria* were the following: Frœlich mentioned two species, *melis* and *vulpis*; he examined *vulpis* but not *melis*; he figured *vulpis* (Gœze had figured *melis*); he was accordingly personally acquainted with *vulpis*, while *melis* he knew only through Gœze's writings; his description of the lips of *vulpis* is far clearer than any idea of the lips he could have obtained from Gœze's figures, and this applies also to the rest of the worm. Now, when an author proposes a new genus, his conception of the genus is greatly influenced by what he sees in the species he examines, and on this account, other things being equal, we consider it best to take as type a species which the author has personally examined rather than one he knows only from the literature (except, of course, in cases of type by inclusion). We see nothing in Frœlich's account which convinces us that he was influenced more by *melis* than by *vulpis*; hence, *vulpis* was designated as type.

Some authors believe that types should be confined entirely to species personally examined by the author of the genus, but it will scarcely be possible to carry out this rule.

C. GENERA FOR WHICH NO TYPE HAS BEEN DEFINITELY SELECTED.

Unfortunately a very large number of generic names with which one has to deal at present come under this category. In determining the type we should be governed by certain general principles. It is, however, difficult to lay down any general scheme of precedence in which these principles shall apply, since individual cases may be influenced by considerations of a practical nature. Naturally it would be a desideratum if the subjective element were entirely eliminated in such matters, but it is doubtful whether it is practical to insist upon this point.

11. COLLECTIVE BIOLOGICAL GROUPS REQUIRING NO TYPE SPECIES.

RULE.—Certain biological groups which have been distinctly proposed as collective groups, but not as systematic units of generic rank, may be treated for convenience as if they were genera, but they require no type species.

Certain so-called genera have been more or less distinctly proposed as unnatural collective groups in which to place forms which have not yet reached stages in development permitting a definite generic determination. As well-known examples may be mentioned *Agamodistomum*, *Amphistomulum*, etc. These groups can best be recognized in their original sense, but they should have no type designated for them, and they should not compete with true generic names in connection with the law of priority.

As examples of this kind cited in the present list may be mentioned the following:

Agamomermis Stiles, 1903, distinctly proposed as an artificial collective group for immature *Mermithidæ* which can not be definitely determined generically until the adult stage is known.

Agamonema Diesing, 1851, can be interpreted as a group of the same kind, for immature nematodes, especially of fish.

Agamonematodum Diesing, 1861, also can be interpreted in the same way.

Dubium Diesing, 1851, is apparently intended as a group of the same nature.

Merinthoidea and *Merinthoidum* Kræmer, 1853, were distinctly proposed as "cache-désordre" for worms resembling *Filaria*, *Gordius*, and *Mermis*.

Nematoideum Diesing, 1851, is apparently used in the same sense, namely, as a purely collective, indefinite group.

Collective groups of this kind are of course unnatural, but they are nevertheless convenient, for they enable an international specific nomenclature for certain forms without recourse to classifying worms in an uncertain manner in genera which have a more or less definite status.

In case species are temporarily classified in such collective groups, we believe their *specific* names should be entitled to priority when they are definitely classified in their proper genera.

12. TYPE BY ELIMINATION.

RULE.—The following species are excluded from consideration in selecting the types of genera:

[(a) Species which were not included under the generic name at the time of its original publication.]

[(b) Species which were species inquirendæ from the standpoint of the author of the generic name at the time of its publication. (See p. 29.)]

[(c) Species which the author of the genus doubtfully referred to it.]

[(d) Species which have subsequently been selected to serve as types for other genera, unless this applies to all of the available species, in which case the last species so selected becomes the type of the original genus; or unless the species which the original author took as his type has been transferred, in which case the original author's intentions should be carried out.]

[RULE.]—In case of Linnæan genera, select as type the most common or the medicinal species.]

RECOMMENDATIONS.—The following species should be shown preference in selecting the type, unless such procedure is contraindicated by the original author's intentions or by practical considerations:

(a) If the genus contains both exotic and nonexotic species from the standpoint of the original author, the type should be selected from the nonexotic species.

[(b) If some of the original species have later been classified in other genera, but not designated as their types, preference should be shown to the species still remaining in the original genus.]

[(c) All other things being equal, page precedence should obtain in selecting a type.]

[(d) Species based upon sexually mature specimens should take precedence over species based upon larval or immature forms.]

[(e) All other things being equal, show preference to a species which the author of a genus actually studied at or before the time he proposed the genus.]

[(f) Show preference to a species bearing the name *communis*, *vulgaris*, *medicinalis*, or *officinalis*.]

[(g) Show preference to the best described, best figured, best known, most easily obtainable species, or of which a type specimen can be obtained.]

[(h) Show preference to a species which belongs to a group containing as large a number of the species as possible.]

[(i) In parasitic genera select, if possible, a species which occurs in man or in some food animal, or in some very common and widespread host.]

In selecting the type of a genus for which no type has been designated or indicated, the first thing to do is to list all of the original species of the genus. Assuming that a careful study of this list does not result in showing that a type was originally determined by designation, implication, inclusion, etc., it becomes necessary to next establish whether any author has subsequently determined the "type by later designation." Assuming that the study is still negative in

results, it is next necessary to determine what original species of the genus are still available as types, and this of course involves a determination of the species which are not available.

ELIMINATION OF SPECIES INQUIRENDÆ.

In the foregoing pages (p. 29) the stand has been taken that one class of species, from the very nature of things, should be considered unavailable as types, namely, species which the original author considered species inquirendæ. Covering a second class of species, which are almost universally considered as unavailable for types, the following rule may be formulated:

ELIMINATION OF DOUBTFULLY REFERRED SPECIES.

RULE.—No species is available as type of a genus if the original author referred said species doubtfully or only conjecturally to the genus in question.

Such a rule seems to be in accord with the best practices in systematic zoology, and seems so eminently justified that a special discussion of the rule appears scarcely necessary.

It is clear that in selecting a type some species should be taken which the author had particularly in mind as a typical representative of the genus. If an author is in doubt as to whether a given species belongs in the genus he is proposing, it is self-evident that he did not consider it a typical representative species of the group and that he had other species more particularly in mind in proposing the genus and writing the generic diagnosis. Accordingly, the doubtful reference of a species to a genus is ipso facto a denial that that species is type.

For instance, in proposing and discussing the genus *Lecithodendrium*, Looss (1896, 86) said: "De ce groupe font partie, de plus, les *Distomum ascidia* et *ascidioides* van Ben. et probablement aussi le *Dist. heteroporum* Duj." Since Looss expressed this reserve regarding the classification of *D. heteroporum* in *Lecithodendrium*, he certainly did not consider it the type of his genus; in fact, this very reserve practically amounted to a definite statement at the time the genus was proposed that *heteroporum* was not in his mind the type. This example will serve to illustrate quite a number of cases in various groups. See also *Euchromadora*.

Ruling out from further consideration all species inquirendæ (from the standpoint of the original author of a genus at the time of its proposition), see page 29, and also all species originally placed in a genus with reserve, with doubt, or by conjecture, we next come to the species which from other causes should be eliminated from consideration.

RESTRICTED AND UNRESTRICTED ELIMINATION.

RECOMMENDATION.—If the genus contains both exotic and nonexotic species from the standpoint of the original author, the type should be selected from the nonexotic species, unless such procedure is contraindicated by the original author's intentions.

It will be seen from page 17, that the A. O. U. Code distinguishes between restricted and unrestricted elimination. For examples of the two processes the reader is referred to page 17.

So far as the Linnæan genera are concerned, it must be admitted that there are certain advantages in restricted elimination, and so far as general theory is concerned there are advantages in this process when applied to later genera. There are also, however, difficulties involved, and at present it would seem better to view restricted elimination as a *recommendation* rather than as a *rule*.

ELIMINATION OF SPECIES SELECTED AS TYPES OF OTHER GENERA.

RULE.—Any species of a genus which has been selected to serve as type for a later genus is excluded from consideration in selecting the type of the earlier genus, unless this applies to all of the available species, in which case the last species so selected becomes the type of the original genus.

In not a few genera the type species has been consciously or unconsciously determined by the transfer of all but one of the original available species to serve as types for new genera. In such event it is in accordance with practice and rules to accept the remaining species as type; or in case several species have not been thus eliminated it is customary to restrict the selection of type to these species, thus excluding from consideration all species which have been selected as types for more recent genera.

As examples of genera of this kind cited in the present paper, we may mention the following:

Spiliphora Bastian, 1865, contained the following species:

elegans.

inæqualis, type of *Hypodontolaimus*, 1888.

robusta, type of *Halichoanolaimus*, 1888.

costata, type of *Monoposthia*, 1889.

By the principle of elimination of species as types of other genera, *elegans* remains as type of *Spiliphora*. This case agrees with page precedence, and also with Bastian's original intentions, for he adopted the custom of placing his type as the first species.

Theristus Bastian, 1865, contained the following species:

acer, type by elimination, author's intention, and page precedence.

velox, type of *Penzancia*, 1889.

In some cases it is nevertheless necessary to select as type a species of the original genus which has been selected as type for a more recent genus. Two kinds of cases may arise, namely:

(a) Cases in which all of the original species have been selected as types for more recent genera, as, for instance,

X-us, 1840, with the species:

albus, type of *Y-us*, 1845.

cinereus, type of *Z-us*, 1850.

niger, type of *M-us*, 1855.

In a case of this kind the last species so transferred (*niger* in the hypothetical case cited) is taken as type of the original genus (*X-us*), and the new genus (*M-us*) based upon this species is suppressed as an unconditional synonym.

(b) In other cases the species which the original author intended as type has been made the type of a new genus. In this instance the original author's intentions should be carried out. One such case is found among nematodes, namely:

Chromadora Bastian, 1865, contained:

vulgaris, which de Man took as type for *Euchromadora*, 1886, and eight other species, none of which appears to have been eliminated.

De Man's action was unfortunate in this case. By the Linnæan principle of 1751 (see below, p. 64), *vulgaris* should have had preference as type of *Chromadora*, even if de Man was not aware of the fact that Bastian intended this as his type. It seems best in this case to carry out Bastian's intentions of taking *vulgaris* as his type.

The general principle of type by elimination, as judged upon the cases of *Spiliphora*, *Theristus*, and the hypothetical case of *X-us*, just given, might lead one to believe that "type by elimination" is a highly satisfactory method and of easy application. Any author, however, who will attempt to apply the method of "type by elimination" to a large number of genera, and to compare his methods with those of other systematists, will probably agree with us that the method as generally applied is frequently far from satisfactory. In fact, systematists are by no means agreed as to just what constitutes "elimination." Because of a number of difficult cases which have come to our attention, we have discussed this subject with systematists in various groups in botany and zoology, and the views obtained may be classified as follows:

(a) Some authors maintain that when a species of a genus has been taken as the *type* of a new genus it is to be excluded from further consideration in selecting the type of the original genus, subject, of course, to the provisions mentioned under *a* and *b* (p. 59). All systematists will doubtless agree that this position is sound.

(b) Still other authors, however, go much further, and maintain that when a species of a genus has been transferred to another genus, by any author, rightly or wrongly, it is excluded from further consideration in selecting the type of the original genus. Thus:

Gæzia Zeder, 1800, with two original species:

[*Cucullanus ascaroides*] = *Gæzia armata* Rudolphi, 1801; and *inermis* Zeder, 1800; transferred to *Liorhynchus* by Rudolphi, 1801 (but not as type); returned to *Cochlus* (namely, *Gæzia* renamed), by Zeder, 1803.

Some systematists would maintain that since *inermis* was placed in *Liorhynchus* in 1801 it can not come into consideration as type of *Gæzia*, and it is immaterial to these authors whether the transfer was a correct one or not.

(c) Some authors hold that if the transfer had been made by Zeder (the author of *Gæzia*), the species could not be considered as type, but having been made by another than the author of *Gæzia* it is still available as type.

(d) Other authors maintain that if, in the opinion of the author who wishes to establish the type of *Gæzia*, Rudolphi's transfer of *inermis* was not correct from a systematic standpoint, this form can be returned to *Gæzia* for the purpose of establishing the type.

(e) We have personally been inclined to follow the plan that, if some author has already transferred an eliminated species back to the original genus, we would consider it on the same basis as if it had never been taken out of the genus.

(f) The A. O. U. Code provides for "restricted elimination," as quoted above, p. 17.

In view of this wide divergence of opinion, it is probably better to take a middle ground for the present and to divide the question of transfer into a rule and a recommendation. The rule covers the species selected as types of other genera (see p. 58), and the recommendation covers the other cases. Hence,

13. PREFERENCE TO BE SHOWN TO SPECIES NOT SUBSEQUENTLY CLASSIFIED IN OTHER GENERA.

RECOMMENDATION.—If some of the original species of a genus have later been classified in other genera, but not designated as their types, preference should be shown to the species still remaining in the original genus in selecting its type.

It may be readily admitted that this recommendation does not go far enough for certain cases, but the advisability of making it stronger at the present time seems doubtful. It is a middle ground, which can not be objected to *as far as it goes*. It is not denied that it does not go far enough to meet the views of certain very able men whose opinions upon the point at issue are valuable. The following cases are of interest in this connection:

Ascaris Linnæus, 1758, originally contained two species:

vermicularis, transferred to *Oxyuris*, 1803, by Bremser, 1819.

lumbricoides, generally accepted as type of *Ascaris*; type of *Lombricoides*, 1821.

The nomenclatural considerations in connection with *Ascaris* are rather complex. (1) It might be maintained that, with authors prior to 1758, *Ascaris* referred to *Ascaris vermicularis* rather than to *Ascaris lumbricoides*, hence that the former should be taken as type. It is not necessary, however, to go back of 1758 in deciding the question, but,

all other things being equal, it would in fact be better to take *Ascaris vermicularis* as type. (2) *Ceteris paribus*, page precedence would make *Ascaris vermicularis* the type species. (3) The point could be raised that since *Stomachida vermis*, 1780, is identical with *Ascaris lumbricoides*, this species should be eliminated, leaving *Ascaris vermicularis* as type. Serious doubts arise, however, whether *Stomachida vermis* is not simply a Latin translation of a vernacular name, rather than a binomial according to the Linnæan system. In fact, it may be interpreted either way, and, other things being equal, it would be better to interpret it as a proper specific binomial. (4) It might be argued that since Zeder (1800a) mentioned *Ascaris lumbricoides* in *Fusaria*, he thereby eliminated this species from *Ascaris*, leaving *Ascaris vermicularis* as type. This view is, however, not free from criticism, since the proposal of *Fusaria*, 1800, was a flagrant renaming of the earlier and generally recognized genus *Ascaris*, 1758. (5) It may be argued that in 1819 *Ascaris* had the same status as a bitypical genus as in 1758, hence that Bremser was free to decide between *lumbricoides* and *vermicularis*, and since he placed *Ascaris vermicularis* in the genus *Oxyuris* which Rudolphi established in 1803, Bremser, by making the transfer, eliminated this species and thereby made *Ascaris lumbricoides* type of *Ascaris*. (6) Furthermore, it may be advanced that from 1819 to the present day nearly every zoological revision of the genera in question has followed Bremser in recognizing *Ascaris lumbricoides* as an *Ascaris*, and *Ascaris vermicularis* as an *Oxyuris*. (7) It may also be advanced that with few exceptions medical, veterinary, and zoological authors have blindly followed the classification here outlined, so that *Ascaris lumbricoides* and *Oxyuris vermicularis* have been in current use since 1819. (8) Finally, it may be stated that several authors have distinctly spoken of *Ascaris lumbricoides* as the type species of *Ascaris*, and it was not made the type of *Lombricoides* until two years after *Oxyuris* was eliminated from *Ascaris*.¹

From the above remarks it will be seen that practical considerations call for the adoption of *Ascaris lumbricoides* as type species of *Ascaris*, unless theoretical principles of nomenclature demand the adoption of *Ascaris vermicularis* as such. It is also clear that, while it would probably have been better if Bremser (1819) had adopted *Stomachida*, 1780, for *Ascaris lumbricoides*, in order to take advantage of the 23 years between this name and *Oxyuris*, 1803, and if he had adopted *Ascaris* for *A. vermicularis*, still in view of the possible doubt regarding the status of *Stomachida*, such action was not obligatory. Hence,

¹ *Oxyuris vermicularis* has but little in common with *O. curvula*, and will doubtless soon be recognized as a distinct genus. It is now type of the subgenus *Oxyurias* Stiles MS.

no theoretical grounds are at present apparent for rejecting *Ascaris lumbricoides* as type species of *Ascaris*.

Sclerostoma Rudolphi, 1809, contained 2 species:

equinum, which is type for *Strongylus*, 1780.

dentatum, transferred to *Cesophagostomum*, 1861=*C. subulatum*, 1861, type.

In this case *equinum* is also "type by inclusion."

Liorhynchus Rudolphi, 1801, contained

Ascaris tubifera Fabricius, 1780; to *Echinorhynchus* by Zeder, 1803; returned to *Liorhynchus* by Rudolphi, 1809.

Ascaris truncata Rudolphi, 1793; probably type of *Liorhynchus*.

Ascaris pulmonalis "Göze;" equals *nigrovenosum*, type of *Rhabdonema*, 1883.

Gözia inermis Zeder, 1800; to *Cochlus* by Zeder, 1803.

Oncholaimus Dujardin, 1845, contained

attenuatus Dujardin; to *Enoplus* by Diesing, 1851; returned to *Oncholaimus* as type by Bastian, 1865, and de Man, 1886, 9. It should probably be accepted as type (see p. 121).

fovearum Dujardin; to *Mononchus* by Bastian, 1865.

muscorum Dujardin; to *Mononchus* by Bastian, 1865.

14. TYPE BY PAGE PRECEDENCE.

RECOMMENDATION.—All other things being equal, page precedence should obtain in selecting a type.

Several authors have raised page precedence to the rank of an iron-clad law. They argue that the first place a specific name is found combined with a generic name represents the first publication of a name, hence that the species in question necessarily represents the type in accordance with the spirit of the law of priority. They further advance the point that page precedence is absolutely objective, hence subjective opinions are eliminated, and every zoologist would necessarily select the same species as type. In their position no difference in principle is acknowledged between two separate publications, on the one hand, and, on the other hand, two separate pages in one and the same publication, or two separate lines on the same page, or two separate words on the same line. The logical deduction from their position is that every genus should be viewed as having had its type determined in its original publication.

It must be admitted that there are certain very great advantages in this rather Draconian point of view. Still it may lead to the very confusion it seeks to avoid, and it may give rise to complications which could just as easily be avoided. In several cases in nematodes it would make as type a species based upon the female alone, although the author had described the male for other species. In view of the importance of the male in classifying nematodes, helminthologists will doubtless be rather reserved in admitting page precedence to higher rank than a recommendation to be followed when all other factors are equal.

In view of the fact that some men endeavor to consistently apply page precedence, it is well for those of us who do not adopt it as a rigid rule to at least follow it in all cases where it is a matter of indifference to us which of two species is taken as type. A consistent adoption of page precedence as a rigid rule may result in the designation of a doubtful or even invalid species as type, because of the arrangement of the species in a work; or since an alphabetical index to species may be bound in some copies of a work *in front*, in other copies *in back*, some authors might insist that one species is type, while other authors would be consistent in insisting that another species is type. Still other authors apply the principle only to the systematic portion of a paper. As a rigid rule, page precedence seems to us to be unsafe, furthermore, because its application may entirely misrepresent an original author's idea and intentions. See also pp. 20, 24.

If an author states that the types of his own genera should be selected by page precedence, this method should of course apply to his names. Thus, Bastian has written us under date of March 22, 1904, "that it might be taken as certain that the species of each genus first described by me was to be considered as type of the genus, so far as I knew it. In only a few cases is there any room for doubt as to this." He then discusses the doubtful cases, and determines in every instance the first species as type, stating that this or that species "was regarded as the type" or "was taken as the type." Fortunately, therefore, Bastian's original intentions are now definitely known regarding the types of his genera, and we consider it obligatory to take his intentions in these cases, although in one instance we consider the selection unfortunate.

15. SEXUALLY MATURE FORMS TAKE PRECEDENCE OVER LARVAL OR IMMATURE FORMS.

RECOMMENDATION.—Species based upon sexually mature specimens should take precedence over species based upon larval or immature forms.

This recommendation needs no argument for helminthologists.

16. PREFERENCE TO BE SHOWN TO SPECIES EXAMINED BY AUTHOR OF THE GENUS.

RECOMMENDATION.—All other things being equal, show preference to a species which the author of a genus actually studied at or before the time he proposed the genus.

In general, it is natural that an author should have a clearer idea of a species which he himself has studied than of one which he knows only from a description written by some one else. And as a rule it will be found that in proposing new genera an author has been influenced more by his actual acquaintance with the organisms themselves than by the description of animals which he has not seen. Although exceptions to this proposition are not unknown, an author's original

intentions will usually be better carried out if a species of his personal acquaintance is designated as type. If, however, it can be shown that an author had some other species more particularly in mind, it is better to select that form as type.

17. PREFERENCE TO BE SHOWN TO SPECIES NAMED *communis*, *vulgaris*, *officinalis*, OR *medicinalis*.

RULE.—In case of Linnæan genera, select as type the most common, or a medicinal species.

RECOMMENDATION.—Show preference to a species bearing the name *communis*, *vulgaris*, *medicinalis*, or *officinalis*, unless such preference is strongly contraindicated by practical considerations.

Linnaeus (1751, 197) laid down the following rule: “Si genus receptum, secundum jus naturæ et artis, in plura dirimi debet, tum nomen antea commune manebit vulgatissimæ et officinali plantæ.” This, so far as we know, is the earliest intimation of the general principle of fixing a particular species as type of a genus. It certainly clearly represents Linnaeus’s intention regarding his own genera, and has the great advantage of rendering more stable the generic names used by nonzoologists. Just how far a rigid application of this rule, if applied regardless of contraindications of a practical nature, would work to the detriment of types accepted at present, it is difficult to state, but in dealing with Linnæan genera his rule should be followed when clearly applicable.

In connection with genera of all authors it seems distinctly best to show preference to species bearing the name *communis*, *vulgaris*, *officinalis*, or *medicinalis*, but it seems unwise to waive all other considerations in favor of this process of selection. Among the nematodes the species named *communis* are types for *Filocapsularia*, *Desmodora*, *Cylindrolaimus*, *Diphtherophora*, and *Terschellingia*, but not for *Spilophora* (in which it was not an original species); *vulgaris*, for *Comesoma*, *Chromadora*, *Euchromadora*, *Graphonema*, *Lombricoides*, and *Tripolyoides*.

Tænia Linnaeus, 1758a, may be mentioned as a case where practical considerations at present distinctly contraindicate the selection of *vulgaris* as type of a Linnæan genus, but the selection of *solium* as type of *Tænia* does not seem to be contrary to the Linnæan rule.

18. THE BEST DESCRIBED, BEST FIGURED, BEST KNOWN, OR MOST EASILY OBTAINABLE SPECIES.

RECOMMENDATION.—Other things being equal, select as type that species which is best described, or best figured, and for which both sexes are described, or a species which is best known, or most easily obtainable, or most common, or of which a type specimen can be obtained.

That the best-described species should frequently be given preference is a natural proposition, but an author should be governed by various considerations in this matter. It is, for instance, sometimes

advisable to give preference to the best figured form. Again, the best known species may be preferred under some circumstances. On the other hand, conditions may be present which would make it decidedly preferable to select as type a species which is the most common, and on this account preference is frequently shown to species bearing the specific name *communis* (see p. 64). To show preference to a species which is easily obtainable is undoubtedly a good policy to follow, for no matter how well a given animal is described the advance in anatomical knowledge may make it advisable that the species be restudied, and in this event the more easily obtainable the species is the better the opportunity for the necessary study. In some cases it may be distinctly preferable to select as type species some form of which the original type specimens are known to be in existence. In the case of animals with separate sexes, it will usually be distinctly better to select as type some species for which both sexes are known.

19. THE ORIGINAL GENERIC NAME TO GO WITH THE GREATER NUMBER OF SPECIES.

RECOMMENDATION.—In dividing a genus containing a large number of species, it is well to select the type from the group which contains the largest number of species.

This recommendation is intended to preserve the old generic name, so far as possible, for as many original species as possible. It was proposed by De Condolle.

20. SPECIAL POINTS TO BE CONSIDERED IN CONNECTION WITH GENERA OF PARASITIC GROUPS.

RECOMMENDATION.—In parasitic genera select, if possible, some species which occurs in a food animal or in man, or in some very common and widespread host.

The justice of this recommendation will probably appeal to all persons who seriously consider the various possibilities involved.

In the first place, if a given species is type of a genus, its name is less likely to be subjected to change than are the names of species which are not types. It would be well, therefore, to take advantage of this greater chance of stability in order to protect from changes the names of animals which are used by others besides zoologists. Thus, the parasites of man and of the domesticated animals come into consideration in the medical and legal writings of authors in human and comparative medicine and in meat inspection, and a change of name of animals or plants which come into consideration in such literature is of infinitely greater inconvenience and difficulty than is the case with a name occasionally used by only a few systematic helminthologists.

Again, if type species are selected from hosts which are common and of wide distribution, they can be more easily obtained for future study.

It is somewhat difficult to arrange hosts in an order of preference in respect to this point, but we may recognize the following groups as approximate, at least:

First series: *Homo sapiens*, *Sus scrofa domestica*, *Mus musculus*, *Mus rattus*, *Mus decumanus*, *Bos taurus*, *Ovis aries*, *Gallus gallus*, *Musca domestica*, *Blatta*, *Phyllodromia*.

Second series: *Canis familiaris*, *Felis catus domestica*, *Equus caballus*, *Anas boschas*, *Anser cinereus*, Culicidæ.

Third series: *Rana temporaria*, *R. esculenta*, *Bufo*.

Fourth series: Animals found in Europe and North America.

Fifth series: Marine or Australian animals.

Sixth series: Animals found in Asia, Africa, or South America.

It is not contended that the above list is without criticism or that it may not be viewed from different standpoints, according to local conditions, but the general idea advanced will doubtless appeal to many workers in parasitology.

21. REMAINING GENERA MENTIONED IN THIS PAPER.

In the foregoing pages it has been shown that certain species must be taken as type for certain genera, and that certain other species may best be taken as type for certain other genera.

There now remain certain generic names, for some of which (for various reasons) we prefer not to definitely propose types at this time. We shall, however, indicate the species which might best serve as type unless contraindicated by some circumstance which does not occur to us at present. As these suggestions are made with reserve, the indication should not be construed as designation of type.

Acanthopharynx Marion, 1870; probably *affinis*, because both male and female are given.

Acanthophorus Linstow, 1876; probably *tenuis* by page precedence. As the generic name is a homonym, it can not hold, but the designation of a type might influence some later generic name.

Amblyura Hemprich & Ehrenberg, 1828; probably *serpentulus*, by page precedence, male and female mentioned, and more extensive mention than *gordius*.

Amphistenus Marion, 1870; ? *agilis*, by page precedence.

Anguillulina Gervais & van Beneden, 1859; probably *tritici*, page precedence; and on basis of Railliet, 1893a, 553.

Aorurus Leidy, 1849; ? *agile*, by page precedence.

Ascaridia Dujardin, 1845; ? *truncata*, by page precedence.

Calodium Dujardin, 1845; ? *annulosum*, because of its hosts (*Mus rattus* and *M. decumanus*); the rats had lived on onions (*Allium cepa*).

Cephalacanthus Diesing, 1853; probably *monacanthus*, by page precedence and because the host (*Tenebrio molitor*) is so common.

Crenosoma Molin, 1861; probably *striatum*, by page precedence, and figured.

Crossophorus Hemprich & Ehrenberg, 1828; ? *collaris*, by page precedence.

Cucullanus Mueller, 1777; see pp. 96-97.

Cystoopsis, see p. 98.

- Dacnitis* Dujardin, 1845; ? *esuriens*, by virtual tautonymy, very common, and because of host; or ? *sphærocephalus* (*Pleurorhynchus*).
- Diaphanocephalus* Diesing, 1851; ? *strongyloides*, by page precedence, and because of single type host.
- Dicheilonema* Diesing, 1861; ? *labiatum*, see p. 100.
- Dipetalonema* Diesing, 1861; probably *caudispina*, see p. 100.
- Dorylaimus* Dujardin, 1845; probably *stagnalis*, by page precedence, both sexes given.
- Echinorhynchus* Zæga, 1776; ? *gadi*, by elimination and page precedence.
- Enoplostoma* Marion, 1870; probably *hirtum*, by page precedence, very common, both sexes given.
- Enoplus* Dujardin, 1845; ? *tridentatus*, by page precedence, partially by elimination, both sexes given.
- Eubostriehus* Greef, 1869; ? *filiformis*, by page precedence, or ? *phalacrus* because of male.
- Eucoleus* Dujardin, 1845; probably *ærophilum* by page precedence, and description more complete; Dujardin apparently took this as his type.
- Filaria* Mueller, 1787; *martis*, by elimination.
- Hærucula* Pallas, 1760, 1768; see p. 110.
- Helmins* Schlotthauber, 1860; ? *paradoxus*, by page precedence, also because of *dubius* (see p. 29); probably not a valid generic name.
- Heterodera* Schmidt, 1871; not accessible to us.
- Histioccephalus* Diesing, 1851; ? *laticaudatus*, by page precedence.
- Ichthyonema* Diesing, 1861; probably *globiceps*, by page precedence, both sexes given.
- Kalicephalus* Molin, 1861; probably *inermis*, by page precedence, only species figured.
- Labyrinthostoma* Cobb, 1898; species apparently not named.
- Lineola* Kœlliker, 1845; probably *sieboldii*, by page precedence, and description slightly more complete.
- Linguatula* Schrank, 1796; probably *bilinguis*, by page precedence and elimination.
- Liorhynchus* Rudolphi, 1801; ? *truncata* by elimination, see p. 116.
- Mastophorus* Diesing, 1853; probably *echiurus*, because its host is so common.
- Monopetalonema* Diesing, 1861; ? *physalurum*, by page precedence.
- Needhamia* Carus; not accessible to us.
- Nematodum* Diesing, 1861; see p. 122.
- Oncholaimus* Dujardin, 1845; ? *attenuatus*, see p. 121.
- Orysona* Schneider, 1866; probably *brevicaudatum*, by page precedence and because of host.
- Phanoglene* Nordmann, 1840; ? *micans*, by page precedence.
- Pleurorinchus* Nau, 1787; [*sphærocephala*], see p. 130.
- Polygordius* Schneider, 1868; apparently "*P. lacteus*."
- Polyporus* Gruby, 1840; not accessible to us.
- Pontonema* Leidy, 1855; probably *vacillatum*, by page precedence, abundant.
- Proboscidea* Bruguère, 1791; see p. 131.
- Solenonema* Diesing, 1861; type ?.
- Spironoura* Leidy, 1856; ? *gracile*, by page precedence.
- Spirura* E. Blanchard, 1849; probably *talpæ*, by page precedence and because of Blanchard's apparent intentions; see p. 138.
- Thoracostoma* Marion, 1870; probably *echinodon*, by page precedence, most common.
- Vibrio* Mueller, 1773; type species very doubtful.

CORRELATED NOMENCLATURAL QUESTIONS.

The discussion thus far has been based upon the subject of type species. During the preparation of the list, however, certain other nomenclatural questions have arisen which it may be well to mention briefly.

22. SYNONYMY BY ORIGINAL PUBLICATION.

Cases like the following have given rise to difficulty among certain authors. Let it be assumed that the genus

X-us, 1810, contains two species (without designation of type):

albus, 1810, and

niger, 1810; and let the genus

Y-us, 1850, contain three species (without designation of type):

albus, 1810 = *X. albus*,

niger, 1810 = *X. niger*, and

flavidus, 1850.

Some authors have construed *Y-us*, 1850, as direct synonym of *X-us* on the ground that it contains all of the original species of *X-us*, hence it must contain the type of *X-us*. Other authors have construed *Y-us* as being used in a broader sense than *X-us*, have returned *albus* and *niger* to *X-us*, and considered *Y-us* valid with *flavidus* as type. The rules here adopted (see p. 42) make *Y-us* a synonym pure and simple of *X-us*, both genera containing the same type. This construction is entirely in accord with the spirit of the law of priority, for *Y-us* should never have been proposed. See also *Spiroptera* and *Acuaria*, and §§ 6 to 8 of the B. A. Code, quoted on page 14.

As an instance of a case in which two opinions may be legitimately defended, mention may be made of the following:

Suppose an author examines certain animals and describes them under a new name, but at the same time mentions one or more earlier specific names as positive or doubtful synonyms, what is the relation of the new name used to the old names quoted in synonymy? Thus:

X-us albus, 1900, new name;

X-us aureus, 1800, given as positive synonym; and

? *X-us niger*, 1850, given as doubtful synonym.

Probably all nomenclaturists will admit that (1) if the author of *albus*, 1900, did not examine specimens personally, then *albus* is simply *aureus* renamed, hence, *albus* is an absolute synonym of *aureus*; (2) if the author of *albus* did examine specimens, and if these were actually identical specifically with *aureus*, then, also, *albus* is an absolute synonym of *aureus*.

If, however, the author of *albus* examined specimens, and later reexamination of these shows that all but 1, 2, 3, or *x* are identical specifically with *aureus*, then what is the relation of *albus* to *aureus*?

Different views may be defended covering such cases.

(1) It might be maintained that since the author of *albus*, 1900, admitted that this was synonymous with *aureus*, the publication of *albus* was absolutely unjustified, and *aureus* should have been adopted. Against this proposition no just objection is evident to us.

(2) Let this error in publishing *albus* be admitted, but let it be assumed that all the specimens of *albus*, except one (or *x*), are specifically identical with or distinct from *aureus*, or let it be assumed that all of the specimens of *albus* are specifically distinct from *aureus*, is the status of *albus* not altered? Do not these specimens represent the types of *albus*, and should not *albus* be judged on its types?

(3) With the premises mentioned in (2), does not *albus* also include the original types of *aureus*, and does this case not, therefore, represent a name which covers an older type, hence, simply a new name unwarrantedly proposed?

Admitting that there are two sides to this question and that the position mentioned under (2) is not without certain justification, this seems to be a case of deciding between the lesser of two evils, and the lesser evil seems to be to rule that the newer name is a synonym of the older, as advanced in (1) and (3). Further, while this lesser evil, though at times it may seem Draconian, can be carried out consistently, the greater evil (2) can not be carried out consistently and it must constantly give rise to doubts as to the course to be pursued. Suppose, for instance, *albus* was based upon two specimens, a male and a female, and one of these is identical with *aureus*, while the other is distinct, what would be the status of *albus*?

Draconian as the position seems to be, we contend that in case an author unreservedly admits that an earlier name is synonymous with the name he publishes as new, the latter is a "synonym by original publication," even if part or all the specimens the author of the new name examined are specifically distinct from the specimens upon which the older name was based.

23. RULE OF HOMONYMS.

A homonym may be defined as one and the same name used for two or more different systematic units of the same rank. All recognized codes agree that only the first use of such name can be admitted as legitimate. The second and later uses of the name, for other units of the same rank, are cases of stillbirth, and the name, as used in these later cases, is forever dead.

In the case of absolute homonyms, it is not usually a matter of great importance whether the type is fixed or not. Nevertheless, it seems advisable as a rule to designate such. Under some circumstances the fixing of a type for a homonym may determine the type for a valid name.

The cases of *absolute* homonyms (namely, absolutely identical combinations of the same letters) found in roundworm generic names may be seen from the following tables:

Roundworm¹ generic names which are absolutely preoccupied.

Roundworm genus.	Preoccupied as follows.
<i>Acanthophorus</i> Linstow, 1876.....	Serv., 1832, coleopteron.
<i>Acanthosoma</i> Mayer, 1844.....	Curt., 1824, hemipteron; DeK., 1842, fish.
<i>Arhynchus</i> Shipley, 1896.....	Dejean, 1834, coleopteron.
<i>Aspidocephalus</i> Diesing, 1851.....	Motsch, 1839, coleopteron.
<i>Brachynema</i> Cobb, 1893.....	Fieb., 1861, hemipteron.
<i>Cephalacanthus</i> Diesing, 1853.....	Lac., 1802, fish.
<i>Cephalonema</i> Cobb, 1893.....	Stimps., ante 1882, worm.
<i>Chatosoma</i> Claparède, 1863.....	Westwood, 1851, coleopteron.
<i>Cheiracanthus</i> Diesing, 1838.....	Agassiz, 1833, fish.
<i>Cochlus</i> Zeder, 1803.....	Humph., 1797, mollusk.
<i>Conocephalus</i> Diesing, 1861.....	Thunb., 1812, orthopteron; Zenk., 1833, crustacean; Schœnh., 1838, coleopteron; Dum., 1853, reptile.
<i>Cystocephalus</i> Railliet, 1895.....	Léger, 1892.
<i>Diceras</i> Rudolphi, 1810.....	Lamarck, 1805, mollusk.
<i>Dipeltis</i> Cobb, 1891.....	Packard, 1885, crustacean.
<i>Discophora</i> Villot, 1875.....	Boisduval, 1836, lepidopteron.
<i>Eucamptus</i> Dujardin, 1845.....	Chevr., 1833, coleopteron; Dej., 1833, coleopteron.
<i>Eurystoma</i> Marion, 1870.....	Rafinesque, 1818, mollusk; Koell., 1853, coleopteron.
<i>Fimbria</i> Cobb, 1894.....	Bohadsch, 1761, mollusk; Meg., 1811, mollusk; Risso, 1826, mollusk.
<i>Hoplocephalus</i> Linstow, 1898.....	<i>Hoplocephalus</i> Cuvier, 1829, reptile; <i>Oplocephalus</i> for <i>Hoplocephalus</i> .
<i>Leptoderes</i> Dujardin, 1845.....	Serv., 1839, orthopteron.
<i>Litosoma</i> van Beneden, 1873.....	Douglas & Scott, 1865, hemipteron.
<i>Mitrephorus</i> Linstow, 1877.....	Schœnherr, 1837, coleopteron; Sclater, 1859, bird.
<i>Neorhynchus</i> Hamann, 1892.....	Sclater, 1869, bird; Milne-Edwards, 1879, crustacean.
<i>Oxysoma</i> Schneider, 1866.....	Gervais, 1849, arachnoid; Kraatz, 1865, coleopteron.
<i>Oxystoma</i> Buetschli, 1874.....	Duméril, 1806, coleopteron.
<i>Oxyurus</i> Lamarck, 1816.....	Rafinesque, 1810, fish; Swains., 1827, bird.
<i>Paradoxites</i> Lindemann, 1865.....	Goldf., 1843, crustacean.
<i>Paragordius</i> Montgomery, 1898.....	equals <i>Paragordius</i> Camerano, 1897.
<i>Pelodytes</i> Schneider, 1860.....	Fitz., ante 1846, or Gistl., 1848, reptile.
<i>Ptercephalus</i> Linstow, 1899.....	Schneider, 1887, protozoon.
<i>Ptychocephalus</i> Diesing, 1861.....	Agassiz, 1843, fish.
<i>Rhabdogaster</i> Metschnikoff, 1867.....	Loew., 1858, dipteron.
<i>Rhabdonema</i> Leuckart, 1883.....	Kuetzing, 1844, polygastrica.
<i>Rhabdonema</i> Perroncito, 1886.....	Leuckart, 1883, nematode; Kuetzing, 1844, polygastrica.

¹ See also p. 11 for explanation of insertion of other than nematode genera.

Roundworm genus.	Preoccupied as follows.
<i>Rhytis</i> Mayer, 1835	Zeder, 1803, worm.
<i>Spilophora</i> Bastian, 1865	Bohem., 1850, coleopteron.
<i>Spinifer</i> Linstow, 1901	Rafinesque, 1831, mollusk.
<i>Spira</i> Bastian, 1865	Brown, 1838, mollusk.
<i>Spirura</i> Diesing, 1861	E. Blanchard, 1849, nematode.
? <i>Stenodes</i> Dujardin, 1845 ¹	Guen., 1845, ¹ lepidopteron.
<i>Trichina</i> Owen, 1835	Meig., 1830, dipteron.
<i>Trichoderma</i> Greef, 1869	Steph., 1835, coleopteron; Swains., 1839, fish.
<i>Trichodes</i> Linstow, 1874	Herbst, 1792, coleopteron.
<i>Triodontus</i> Looss, 1900	Westwood, 1845, coleopteron.
<i>Tropidurus</i> Wiegmann, 1835	Neuwied, 1824, reptile.
<i>Tropisurus</i> Diesing, 1835	Neuwied, 1824, lizard.

Roundworm generic names which absolutely preoccupy other names.

Roundworm genus.	Absolutely preoccupies the identical name proposed by.
<i>Acanthocephalus</i> Kœlreuter, 1771	Lap., 1833, hemipteron.
<i>Allodapa</i> Diesing, 1861	Brunn, 1878, orthopteron.
<i>Anguillula</i> Mueller, 1786	Hemprich & Ehrenberg, 1828, nematode.
<i>Autoplectus</i> Balsamo-Crivelli, 1843	Raffray, 1883, insect.
<i>Capillaria</i> Zeder, 1800	Haworth, 1828, lepidopteron.
<i>Capsularia</i> Zeder, 1800	Oken, 1815, coleopteron.
<i>Crino</i> Lamarck, 1801	Hueb., 1816, lepidopteron; Gistl., 1848, mollusk.
<i>Dicelis</i> Dujardin, 1845	Stimps., 1857, worm.
<i>Diplogaster</i> Max Schultze, 1857	Bigot, 1886, insect.
<i>Echinocephalus</i> Molin, 1858	Schneider, 1875, protozoon.
<i>Elaphocephalus</i> Molin, 1860	Macleay, 1878, reptile.
<i>Enoplus</i> Dujardin, 1845	Reiche, 1859, coleopteron; Agassiz, 1846, fish.
<i>Fimbria</i> Cobb, 1894	Belon, 1896, insect.
<i>Furia</i> Linnæus, 1758	Cuvier, 1828, mammal.
<i>Heligmus</i> Dujardin, 1845	Cand., 1864, coleopteron.
<i>Laphyetes</i> Dujardin, 1845	Reichenbach, 1850, bird; Stål, 1853, hemipteron; Först., 1878, hymenopteron.
<i>Liniscus</i> Dujardin, 1845	Lefèvre, 1885, insect; Hæckel, 1880, cœlenterate.
<i>Lobocephalus</i> Diesing, 1838	Kramer, 1898, arachnoid.
<i>Paragordius</i> Camerano, 1897	equals <i>Paragordius</i> Montgomery, 1898.
<i>Pharyngodon</i> Diesing, 1861	Cope, 1865, reptile.
<i>Plectus</i> Bastian, 1865	Scudder, 1882 [possibly earlier], coleopteron, for <i>Plectris</i> , 1825.
? <i>Proboscidea</i> "Bruguière, 1791" [see p. 131].	Les., 18—, worm; Spix, 1823, mammal; Schmidt, 1832, mollusk; Trosch., 1848, mollusk.
<i>Rhabdonema</i> Leuckart, 1883	Perroncito, 1886, nematode.
<i>Spirura</i> E. Blanchard, 1849	Diesing, 1861, nematode.
<i>Strongylus</i> Mueller, "1780," 1784	<i>Strongylus</i> Herbst, 1792, coleopteron; <i>Strongylus</i> , ? date, for <i>Stroggulus</i> ; Motsch, 1845, coleopteron.
<i>Tetrameres</i> Creplin, 1846	Schaufuss, 1877, coleopteron.

¹ We have not determined the relative date of these two publications.

Roundworm genus.	Absolutely preoccupies the identical name proposed by.
<i>Trichoderma</i> Greef, 1869.....	Nonfried, 1894, insect.
<i>Trichonema</i> Cobbold, 1874.....	Fromentel, 1875, protozoon.
<i>Trichosoma</i> Rudolphi, 1819.....	Boisd., 1834, lepidopteron; Swains., 1839, fish.
<i>Uncinaria</i> Frœlich, 1789.....	Vest., 1867, mollusk.
<i>Uracanthus</i> Diesing, 1861.....	Fitzinger, 1865, bird.

There are but few authors who reject the Rule of Homonyms for absolute homonyms. Among living helminthologists, only one seems to have declared himself against it. In 1898, von Linstow proposed the name *Hoplocephalus*, and changed it the same year to *Echinonema* because *Hoplocephalus* was preoccupied in reptiles, 1829. Later, however, in 1899, he objected to the rejection of *Trichina* Owen, 1835 [not Meig., 1830, dipteron]. Von Linstow's position was that a genus of nematodes is not likely to be confused with a genus of diptera; hence, *Trichina* Owen, 1835, can safely be adopted. Consistency would compel him to admit as available such cases as: *Conocephalus* Diesing, 1861 (nematode), *Conocephalus* Thunb., 1812 (orthopteron), *Conocephalus* Zenk., 1833 (crustacean), and *Conocephalus* Dum., 1835 (reptile); or *Laphyctes* Dujardin, 1845 (nematode), *Laphyctes* Reichenbach, 1850 (bird), *Laphyctes* Stål, 1853 (hemipteron), and *Laphyctes* Fœrst., 1878 (hymenopteron).

24. PHONONYMS.

While von Linstow seems to stand practically alone among helminthologists in regard to accepting absolute homonyms, there is a legitimate difference of opinion among systematists as to whether two combinations of letters must be absolutely identical in order to be homonyms. Thus the "Merton Rules" provide for the rejection of phononyms.

As some author, in discussing the Merton Rules, has already pointed out, while generic names as pronounced by a person of one nationality may be more or less phononymous, the same name pronounced by a person of another nationality may have a very different sound. The Merton Rule of phononyms does not therefore appear to be necessary.

Among roundworm genera the following names may be mentioned as more or less phononymous:

Roundworm genus.	Phononyms.
<i>Acanthrus</i> Acharius, 1780.....	<i>Acanthurus</i> Eichoff, 1886, insect.
<i>Acrobeles</i> Linstow, 1877.....	<i>Acrobela</i> Fœrster, 1862, hymenopteron; <i>Acrobelus</i> Stål, 1869, hemipteron.
<i>Amphistenus</i> Marion, 1870.....	<i>Amphisternus</i> Germ., 1843, coleopteron.
<i>Enoplus</i> Dujardin, 1845.....	<i>Anoplus</i> Schœnh., 1826, coleopteron; Gray, 1840, reptile; Schl., 1842, fish.
<i>Eurystoma</i> Marion, 1870.....	<i>Eurysoma</i> Gistl., 1829, coleopteron; Koch, 1840, arachnoid.
	<i>Eurysomus</i> Young, 1866, fish.

Roundworm genus.

Phononyms.

<i>Fimbria</i> Cobb, 1894c	<i>Fimbriaria</i> Frœlich, 1795, cestode.
<i>Gazia</i> Zeder, 1800	<i>Gasia</i> Bœck, 1871, crustacean; <i>Gatia</i> Karsch, 1892, insect.
<i>Microlaimus</i> de Man, 1880	<i>Microlamia</i> Bates, 1874, coleopteron.
<i>Streptostoma</i> Leidy, 1849	<i>Streptotoma</i> Guér., 1862, coleopteron.
<i>Tribactis</i> Dujardin, 1845	<i>Tribacis</i> Billb., 1820, lepidopteron.

25. DOUBTFUL HOMONYMS.

The following generic names mentioned in this paper are very similar to, but not identical with, other generic names. Opinion differs in regard to their validity:

Roundworm genus.

Doubtful homonyms.

<i>Acanthocheilus</i> Molin, 1858	<i>Acanthocheila</i> Stål, 1860, hemipteron.
<i>Allodapa</i> Diesing, 1861a	<i>Allodape</i> Lep., Serv., 1825, hymenopteron. <i>Allodapus</i> Fieb., 1861, hymenopteron.
<i>Angiostoma</i> Dujardin, 1845a	<i>Angystoma</i> Schumacher, 1817, for <i>Angystoma</i> Klein, 1753, mollusk.
<i>Arrhynchus</i> Shipley, 1896	<i>Arrhynchus</i> Philippi, 1871, insect.
<i>Asconema</i> Leuckart, 1886	<i>Askonema</i> Kent, 1870, sponge.
<i>Capillaria</i> Zeder, 1800a	<i>Capellaria</i> Gistl., 1848.
<i>Chromogaster</i> Cobb, 1894c	<i>Chromogaster</i> Lauterborn, 1893, worm.
<i>Cosmocephalus</i> Molin, 1858	<i>Cosmocephala</i> Stimps., 1857, worm.
<i>Cosmocerca</i> Diesing, 1861a	<i>Cosmocercus</i> Dej., ? date, coleopteron; Thoms., 1864, coleopteron.
<i>Cyathostoma</i> E. Blanchard, 1849a	<i>Cyathostomum</i> Molin, 1861.
<i>Dactylius</i> Curling, 1839a	<i>Dactylum</i> Megerle, ? date, mollusk.
<i>Diplododon</i> Molin, 1861	<i>Diplodon</i> Spix, 1827, mollusk; Nitzsch, 1840, bird. <i>Dioplodon</i> Gervais, 1850, mammal. <i>Diplodonta</i> Bronn, 1831, mollusk. <i>Diplodontus</i> Dug., 1834, arachnoid.
<i>Dyacanthos</i> Stiebel, 1817	? <i>Diacanthus</i> Siebold, 1817, worm; Latreille, 1834, coleopteron. <i>Diacantha</i> Swainson, 1839, fish; Chevr., 1834, coleopteron.
<i>Enoplus</i> Dujardin, 1845	<i>Enoplosus</i> Lacép., 1802, fish; changed to <i>Enoplus</i> Agassiz, 1846.
<i>Eucoleus</i> Dujardin, 1845	<i>Eucolus</i> Muls., 1853, coleopteron.
<i>Globocephalus</i> Molin, 1861	<i>Globicephalus</i> Lesson, 1828, mammal. <i>Globiocephalus</i> Gray, 1843, mammal.
<i>Heligmus</i> Dujardin, 1845	<i>Eligma</i> Huebn., 1816, lepidopteron, changed to <i>Heligma</i> .
<i>Heterocheilus</i> Diesing, 1839	<i>Heterocheila</i> Rond., 1857, dipteron. <i>Heterocheila</i> —, ? date, for <i>Heterochella</i> Lioy., 1864, dipteron. <i>Heterochelus</i> Burmeister, 1844, coleopteron. <i>Heterochilus</i> , ? date, for <i>Heterocheila</i> .
<i>Heterodera</i> Schmidt, 1871	<i>Heteroderes</i> Latreille, 1834.
<i>Hoplocephalus</i> Linstow, 1898	<i>Oplocephalus</i> Cuvier, 1829, reptile. <i>Hoplocephala</i> Macq., 1845, dipteron. <i>Heplacephala</i> Walk., 1857, dipteron.

Roundworm genus.	Doubtful homonyms.
<i>Hoplocephalus</i> Linstow, 1898.....	<i>Oplocephala</i> Lap., 1831, coleopteron. <i>Hoplocephala</i> (v. <i>Heplacephala</i> , <i>Oplocephala</i>).
<i>Ironus</i> Bastian, 1865	<i>Irona</i> Schiøedte, 1883, crustacean. <i>Ironeus</i> Bates, 1872, coleopteron.
<i>Isakis</i> Lespès, 1856, changed to	<i>Isacis</i> Cope, 1873, and
<i>Isacis</i> Diesing, 1861	<i>Isacus</i> Cope, 1873, mammal.
<i>Isacus</i> Zool. Rec., 1897.	<i>Isaca</i> Walker, 1857, hemipteron.
<i>Labiduris</i> Schneider, 1866	<i>Labidura</i> Leach, 1817, orthopteron.
<i>Laphyctes</i> Dujardin, 1845	<i>Laphyctis</i> Loew., 1859, dipteron.
<i>Lecanocephalus</i> Diesing, 1839.....	<i>Lecanicephalum</i> Linton, 1891, cestode.
<i>Leiuris</i> Leuckart, 1850.....	<i>Leiurus</i> Ehr., 1829, arachnoid; Swains., 1839, fish; Gray, 1845, reptile.
<i>Leptodera</i> Dujardin, 1845	<i>Leptodeira</i> Fitz., 1843, reptile.
<i>Leptoderes</i> Dujardin, 1845.....	<i>Leptodira</i> for <i>Leptodeira</i> . <i>Leptodirus</i> Sturm., 1846, coleopteron. <i>Leptodirus</i> for <i>Leptoderus</i> Schmidt, 1849, coleopteron.
<i>Leptosomatum</i> Bastian, 1865.....	<i>Leptoderis</i> Billb., 1820, coleopteron. <i>Leptosoma</i> Whitman, 1886, worm. <i>Leptosomatium</i> Kraatz, 1895, insect.
<i>Lepturis</i> Schlotthauber, 1860.....	<i>Leptura</i> Linnæus, 1758, coleopteron. <i>Lepturus</i> Brisson, 1760, bird.
<i>Litosoma</i> van Beneden, 1873	<i>Litosomus</i> Lacordaire, 1866, coleopteron.
<i>Mastophorus</i> Diesing, 1853	<i>Mastopora</i> Eichw., 1840, mollusk.
<i>Mitrephoros</i> Linstow, 1877.....	<i>Mitrephorus</i> Schœnherr, 1837, coleopteron; Slater, 1859, bird. <i>Mitrophorus</i> Burm., 1844, coleopteron.
<i>Monodontus</i> Molin, 1861	<i>Monodon</i> Linnæus, 1758, mammal; Cuvier, 1817, mollusk; Schweigger, 1820, mollusk; Gerv., 18—, mollusk. <i>Monodonta</i> Lamarck, 1799, 1801, mollusk. <i>Monodontes</i> Montf., 1810, mollusk.
<i>Odontophora</i> Buetschli, 1874	<i>Odontophorus</i> Vieillot, 1816, bird.
<i>Oncophora</i> Diesing, 1851.....	<i>Onchophora</i> Busk., 1855, mollusk. <i>Oncophorus</i> Rudow., 1874, neuropteron; Eppelsheim, 1885, insect.
<i>Onyx</i> Cobb, 1891.....	<i>Onix</i> Mayr & Forel, 1884, insect.
<i>Oxystoma</i> Buetschli, 1874	<i>Oxystomus</i> Fischer, 1803, mammal; Rafinesque, 1810, fish; Latreille, 1825, coleopteron; Swains., 1837, bird.
<i>Oxyuris</i> Rudolphi, 1803	<i>Oxyurus</i> Rafinesque, 1810, fish; Swains., 1827, bird.
<i>Oxyurus</i> Lamarck, 1816	<i>Oxyura</i> Bonap., 1828, bird. <i>Oxyura</i> for <i>Oxura</i> Kirby, 1817, coleopteron.
<i>Paradoxites</i> Lindemann, 1865	<i>Paradoxides</i> Brongn., ? date, crustacean.
<i>Phacelura</i> Hemprich & Ehrenberg, 1828 ..	<i>Phacellura</i> , ? date, for <i>Phakellura</i> Guild., 1840, lepidopteron.
<i>Physocephalus</i> Diesing, 1861.....	<i>Physocephala</i> Schin., 1861, dipteron.
<i>Plectus</i> Bastian, 1865	<i>Plectris</i> Lepell. & Serville, 1825, coleopteron; changed to

Roundworm genus.	Doubtful homonyms.
<i>Plectus</i> Bastian, 1865	<i>Plectus</i> by Scudder, 1882, p. 269, possibly earlier.
<i>Polyporus</i> Gruby, 1840	<i>Polypora</i> M'Coy, 1844, pol.; Mosel, 1876, coelenterate.
<i>Proboscidea</i> "Bruguière, 1791"	<i>Proboscidia</i> Bory, 1824, rotifer.
<i>Proleptus</i> Dujardin, 1845	<i>Prolepta</i> Walk., 1851, hemipteron.
<i>Pterocephalus</i> Linstow, 1899	<i>Pterocephala</i> Swains., 1839, fish.
	<i>Pterocephalia</i> Roem., 1852, crustacean.
<i>Rhabditis</i> Dujardin, 1845	<i>Rhabdites</i> Haan, 1825, mollusk.
<i>Spiliphora</i> Bastian, 1865	<i>Spilophora</i> Bohem., 1850, coleopteron.
	<i>Spilophorus</i> Lac., 1856, coleopteron.
<i>Spilophora</i> , Bastian, 1865	<i>Spilophorus</i> Lac., 1856, coleopteron.
<i>Spironoura</i> Leidy, 1856	<i>Spirura</i> E. Blanchard, 1849, nematode.
<i>Stenurus</i> Dujardin, 1845	<i>Stenura</i> Dejean, 1834, coleopteron.
	<i>Stenuris</i> Kirby, 1837, coleopteron.
<i>Strongylus</i> Mueller, "1780," 1784	<i>Stroggulus</i> Motsch, 1845, coleopteron.
<i>Synonchus</i> Cobb, 1894	<i>Synonymcha</i> Chevrolat, 1833, coleopteron.
<i>Trichina</i> Owen, 1835	<i>Trichinia</i> Bisch., ? date, worm.
	<i>Trychina</i> Klug., ? date, for
	<i>Trychine</i> Klug., ? date, coleopteron.
<i>Trichodes</i> Linstow, 1874	<i>Trichotis</i> Felder, 1874, lepidopteron.
	<i>Trichoda</i> Huebner, 1806, lepidopteron.
<i>Trichosoma</i> Rudolphi, 1819	<i>Trichosomus</i> Swains., 1839, fish; Chevro-
	lat, ? 1881, coleopteron.
<i>Trichuris</i> Roederer & Wagler, 1761, 1762 ..	<i>Trichurus</i> Wagner, 1843, for
	<i>Trichosurus</i> Lesson, 1828, mammal.
	<i>Trichura</i> Huebn., 1816, lepidopteron.
	<i>Trichiurus</i> Linnaeus, 1758, fish.
	<i>Trichiura</i> Steph., 1829, lepidopteron.
<i>Tricoma</i> Cobb, 1894	<i>Tricomia</i> Walk., 1865, lepidopteron.
<i>Tripula</i> Bastian, 1865	
<i>Tripyla</i> Bastian, 1865	<i>Tripylus</i> Phil., 1845, echinoderm.
<i>Uracanthus</i> Diesing, 1861	<i>Uracantha</i> Hope, ante 1846, coleopteron.

Judging from published opinions, Braun, Looss, and many other authors would probably construe most of these names under the Rule of Homonyms. One of the points advanced in favor of so doing is that these names, if used as basis for family and subfamily names, might give rise to homonyms in groups higher than genera. This point hardly appears to be so important as might at first seem, for it is the exception rather than the rule that a family has but one genus, and if it has two genera, and one of its generic names is a doubtful homonym, the other generic name could be used as basis for the family and subfamily names.

Judging from von Linstow's position on absolute homonyms, he would doubtless accept doubtful homonyms as available. Jordan, Everman, Ashmead, and a number of other authors, including ourselves, accept names of this class on the ground that a difference of a single letter in two names precludes the possibility of their being identical, hence they can not be homonyms. (See Art. 36, Internat. Code.)

26. EMENDATION OF NAMES.

The question relative to the necessity of emending names which were not originally published in accordance with the usages of classical orthography is one upon which there has been very great difference of opinion. Personally we have contended that *classical* Latin in nomenclature is a *desideratum*, but of really relatively secondary importance, and further (unfortunately) an impractical proposition; on this account we have contended, in common with Jordan, Everman, Ashmead, and a number of other zoologists, for the adoption of the originally published orthography, be it good, bad, or indifferent, and proposing that all names that are incorrectly written should be construed under Article 8k, of the International Code, as "arbitrary combinations of letters."

The International Congress of Zoology, held in Berlin, Germany, in 1901, decided in favor of emendation, hence, emendation is to-day called for by the International Code. (See Article 19.)

It is not desired to reopen the question at this time, but attention may be directed to certain work which should be undertaken before emendation is put into practice.

It has been those authors who have argued in favor of the law of priority who have undertaken that extensive pioneer work which has made the carrying out of that law possible. Many authors who argued against it have adopted the law of priority in cases where they could do so without too much extra study, or where other men have worked out its application to certain groups. In this same spirit those authors who feel that emendation is an impractical proposition can justly look to their colleagues who think the rule practical to demonstrate its practicability by assuming the necessary burden of pioneer work in collating all the data which are prerequisite to an application of the rule in such a way as not to result in constant instability.

One of these prerequisites is a list of generic names which contains not only all generic and subgeneric names thus far proposed, *but also all the variations in orthography of said names* (to determine how many of these variations vitiate otherwise valid names by homonymy), *and also the authoritatively correct orthography of all these words*. To start in on emendation without such a list would be to take a leap in the dark, not knowing what may happen or where we may finally land. We favor the principle of majority rule, but in this case we belong to the conservative minority.

As a small contribution to this list, we are endeavoring gradually to collect all the names and variations found in the groups in which we are especially interested.

As soon as such a list demonstrates the feasible application of the rule, and places authors in a position so that it can be enforced, we

believe that all of us who have opposed its adoption should by all means follow the orthography agreed upon by the supporters of the rule. Until such a list and such a demonstration exists, or until there is at least an agreement upon the most common names and also an agreement as to what are homonyms, we find ourselves forced (much against our will) to continue to use original orthography.

As interesting examples of certain cases which will arise in the preparation of such a list¹ as is here suggested we will mention the following nematode genera:

The hymenopteron genus *Allodape*, 1825, seems to have been changed to *Allodapus* by Fieb., 1861. What influence has this upon *Allodapa* Diesing, 1861? This case brings up the question as to whether words like *Distomus*, *Distoma*, and *Distomum* represent homonyms. (See Internat. Code, Art. 36.)

The Pre-Linnæan generic name *Angystoma* Klein, 1753, later Schumacher, 1817, was changed by Agassiz, 1846, to *Angiostoma*. What effect does this have upon *Angiostoma* Dujardin, 1845?

Chromagaster Cobb, 1894, was changed to *Chromogaster* by Waterhouse, 1902. How is this influenced by *Chromogaster* Lauterborn, 1893?

Diplolaimus Linstow, 1876, was changed to *Diplolæmus*, see Scudder, 1884. How is this influenced by *Diplolæmus* Bell, 1843?

There is a lepidopteron genus *Eligma* Huebn., 1816, changed to *Heligma* by ? , date ?. What is the status of *Heligmus*, 1845?

There is a fish genus *Enoplosus* Lacep., 1832, which does not seem liable to be confused with the nematode genus *Enoplus* Dujardin, 1845. In 1846, Agassiz emended *Enoplosus*, 1832, to *Enoplus*, which is certainly an absolute homonym of *Enoplus*, 1845. What is the status of *Enoplosus*, 1832, and *Enoplus*, 1845?

Compare *Heterocheilus* Diesing, 1839, with *Heterocheilus* Burmeister, 1844, coleopteron, and *Heterocheila* Rond., 1857, dipteron (also *Heterocheilus*); *Heterochella* Liroy., 1864, dipteron (also *Heterocheila*).

Compare *Hoplocephalus* Linstow, 1898, with *Hoplocephalus* and *Oplocephalus* Cuvier, 1829, reptile; *Hoplocephala* Macq., 1845, dipteron; *Heplacephala* Walker, 1857, dipteron; *Oplocephala* Lap., 1831, coleopteron; *Hoplocephala* (v. *Oplocephala* and *Heplacephala*).

Isakis Lespès, 1856, was proposed for a genus of worms; it appears to have been changed to *Isacis* by Diesing, 1861; it is given by the Zool. Rec. (1896), 1897, as *Isacus*. Now, there exists *Isacis* and *Isacus* Cope, 1873, mammal. What effect does *Isakis*, 1856, have upon *Isacus*, 1873, and would the effect be the same if *Isacus* had not been used by Zool. Rec., 1897?

¹ See also Cockerell, 1905. The letter "k" in zoological nomenclature < Science, N. Y., n. s. (561), v. 22, Sept. 29, 399-400.

There is a coleopteron genus *Mitrephorus*, 1837, and a bird genus *Mitrephorus*, 1859. What is the status of *Mitrephorus* von Linstow, 1877, altered form of *Mitrephorus*, 1877?

Oxyuris Rudolphi, 1803, was altered to *Oxyurus* by Lamarck, 1816. What effect does this have upon *Oxyurus* Raf., 1810 (fish)?

Spironoura Leidy, 1856, was apparently emended by Diesing, 1861, to *Spirura*. There already existed a *Spirura* Blanchard, 1849, hence, the emended form *Spirura*, 1861, is excluded since it is a homonym. *Spironoura*, 1856, is sufficiently distinct from *Spirura*, 1849, as not to be confused. What is the status of *Spironoura*, 1856? Is it a homonym of *Spirura*, 1849?

27. NOMENCLATRURAL STATUS OF MISPRINTS.

Criticisms have been raised because some authors include a citation of typographic errors in synonymy. Misprints seem to have a very definite nomenclatural status, however, and are therefore subject to citation and should be listed. In the first place it is often difficult to distinguish clearly between misprints and emendations, and cases are not unknown (*Dermacentor*—*Dermacenter*, *Hymenolepis*—*Hymenolepsis*, etc.), where a misprint has been adopted by several authors under the supposition that they were using the correct name. Further, the International Code provides for the admission of arbitrary combinations of letters as available scientific names. Such a name would naturally be a homonym if the same combination of letters had occurred as a misprint.

28. ORIGIN OF THE LAW OF PRIORITY.

There still remain a few zoologists who do not follow the law of priority, and some men seem to be under the impression that this law is a more or less recent idea. It is, however, not a new idea, but seems to have been first proposed by Linnæus, although he did not follow it out consistently. In helminthology it was adopted by Rudolphi, 1801, but he did not apply it consistently.

29. RUDOLPHI'S RULES OF NOMENCLATURE.

The fact that Rudolphi (1801, 62–65) published a set of rules on nomenclature seems to have been more or less generally overlooked. As they are of importance in interpreting his names, and as his code is very short, the rules are here reprinted for the benefit of helminthologists who do not have access to them. It will be seen that in 1801 Rudolphi declared in favor of the law of priority, although he did not adhere strictly to it in later years.

UEBER DIE BENENNUNGEN DER WÜRMER.

Die Namen der Würmer darf ich hier nicht ganz vorbeigehen, doch werde ich nur wenige spezielle Bemerkungen darüber machen. Ueber den Nutzen einer zweckmässigen Nomenklatur ist man allgemein einverstanden, und die Grundsätze, welche Linné in seiner *Philosophia botanica* für die Pflanzenkunde aufstellte, können mit wenigen Einschränkungen als für alle Naturreiche gültig angenommen werden. Folgende Grundsätze scheinen mir hier von Wichtigkeit:

1. Ein schon gebräuchlicher Name muss, wenn er irgend erträglich ist, und nicht geradezu auf etwas falsches hindeutet, beibehalten werden. Ich lasse daher die Namen *Ascaris*, *Trichocephalus*, *Festucaria*, *Fasciola*, *Linguatula*, *Tænia* stehen, die Zeder mit neuen vertauscht hat, obgleich einige dieser neuen Namen wirklich gut sind. Man muss ja ungeachtet dieser neuen Benennungen, die alten doch auch behalten, und in der Folge liessen sich vielleicht wieder bessere finden, so dass des Namenswechsels kein Ende wäre. Wie schwer hält es nicht, die praktischen Aertze dahin zu bewegen, den wirklich falschen Namen *Trichuris* oder *Ascaris trichiura* mit *Trichocephalus* zu vertauschen; sollten sie nun gar die Namen *Tænia*, *Ascaris* u. s. w. verändern, das würde ihnen sehr schwer ankommen, und ist auch überflüssig.

2. Wenn wir die Würmer in gewisse Familien bringen, so müssen diese Familien freilich einen Namen haben, allein dazu können wir den Namen einer hervorstechenden Gattung im Pluralis gebrauchen, wie wir dies z. B. häufig bei den natürlichen Ordnungen der Pflanzen thun; es ist also darum nicht nöthig, einen Gattungsnamen zum Familiennamen zu erheben, und der Gattung selbst einen neuen Namen zu geben, so können die Rundwürmer im Allgemeinen *Ascarides* genannt werden, und die Gattung *Ascaris* behält ihren Namen dessen ungeachtet.

3. Der Gattungsname muss, wenn es sein kann, etwas charakteristisches ausdrücken, z. B. *Echinorhynchus*, *Liorhynchus*, *Cysticercus*.

4. Der Gattungsname darf von keinem Schriftsteller hergenommen werden, z. B. *Gæzia*, dies ist im Thierreich ungebräuchlich, und hat auch wirklich etwas sonderbares an sich. Im Pflanzenreich hingegen ist es üblich, und auch wirklich nicht zu tadeln.

5. Der Name Wurm lässt sich im deutschen Gattungsnamen anbringen, allein in einem systematischen lateinischen oder griechischen Namen passt er nicht; da heisst die Klasse Wurm, und bei der Gattung sagt es nichts, wenn ich es hier auch gebrauche, z. B. *Rytelminthus*, *Alyselminthus*.

6. Eben so wenig muss der Gattungsname auf etwas zielen, was der ganzen Klasse zukommt; wenn daher die Würmer im Allgemeinen (ob es gleich Ausnahmen giebt) *tentacula* zu einem Charakter haben, darf ich keine WurmGattung *Tentacularia* nennen, so wie ich auch keine Insektengattung *Antennaria* nennen würde.

7. Von den Aufenthalt des Wurmes darf ich keinen Gattungsnamen hernehmen, daher ist der Name *Cystidicola*, den Fischer dem von ihm entdeckten Wurm gab, ganz falsch. Erstlich sind mehrere Würmer eben so gebildet, ohne sich in der Fischblase aufzuhalten, man sehe oben die Gattung *Ophiostoma*, und ich glaube sogar den Fischerschen Wurm in dem Darmkanal der Forelle gefunden zu haben. Zweitens sind auch andere Würmer¹ in der Fischblase gefunden. Drittens heisst eine jede Blase *Cystis*, und man könnte alle in Blasen vorkommende Würmer so nennen. Der Aufenthalt ist ja immer nur sehr zufällig.

8. Noch weniger darf der Gattungsname von dem Thier hergenommen werden, worin sich eine Art zeigt, z. B. *Strigea*, da sich ähnliche Würmer auch in anderen Thieren zeigen.

¹ Goëze (Naturgeschichte der Eingeww. S. 421) führt an, dass Steller in der Schwimmblase des *Salmo Eperlanus* Würmer gefunden habe, die G. zum Fischbandwurm bringen mögte.

9. Die Namen, die sich auf *aria* endigen, taugen freilich nicht viel, indess sind sie schon sehr gebräuchlich, die aus *odes* aber nicht; daher nicht *Mastigodes*.

10. Wollen wir den Entomologen ihre Namen lassen, sie aber auch dafür bitten, uns nicht die unserigen, wie z. B. *Strongylus*, zu nehmen.

Diess in Rücksicht der Gattungsnamen. In Ansehung der Trivialnamen habe ich folgendes zu bemerken: Es hält allerdings schwer diese immer gut zu wählen, indess werden sich doch immer dergleichen finden lassen, wenn man auf die Form im Ganzen, oder auf die hervorstechende Gestalt einzelner Theile sieht. Von den Thieren, in denen sie gefunden sind, müssen die Würmer durchaus nicht benannt werden, da sich ein und derselbe Wurm oft in mehreren Arten oder sogar Gattungen von Thieren zeigt; alle so beschaffene Namen müssen daher geändert werden. Von Schriftstellern darf der Trivialname auch wohl nicht entlehnt werden, da diess immer bei den Würmern sonderbar klingt, besonders da es sonst üblich war, die Würmer nach dem Thier, worin sie sich fanden, zu benennen.

30. POLYNOMIAL AUTHORS BETWEEN 1758 AND 1819.

It is often difficult to decide whether or not a given paper should be rejected because of its not being strictly binomial in its nomenclature. These papers which are in doubt not infrequently give rise to considerable trouble in nomenclatural matters; and not a few cases of nomenclature could be solved more easily if the publications in question were to be ruled out of consideration entirely. On account of the difficulty in obtaining an agreement upon the matter, it might possibly be feasible to appoint a committee which should list the papers between 1758 and 1819 which are not entitled to citation in synonymy or to consideration in connection with the Law of Priority.

Of such papers which contain nematode genera, the following may be mentioned as not entitled to any nomenclatural consideration: Pallas (1760, 1768), Pereboom (1780), Fischer (1788b, 1789a), and Werner (1786).

As papers in connection with which authors will be more likely to differ in opinion may be mentioned: Bloch (1780a, 1782a) and Goeze (1782a).

PART II.—LIST OF GENERIC NAMES, CHIEFLY NEMATODES, WITH THEIR ORIGINAL AND TYPE SPECIES.

The following list includes all of the nematode genera (both free-living and parasitic) which we have been able to find recorded. It also includes all of the species which come into consideration in determining the type species of the genera in question. With a few exceptions (in cases of type by original designation) all of the original species are given under each genus, and under these species cross references are given to the various genera in which they have been placed.

For various reasons it has not been found feasible to confine the list entirely to the nematodes; accordingly, occasional references will be found to genera of other groups.

abbreviata Rudolphi, 1819a, 30, 257–258.

1819: *Physaloptera*.

abbreviatus Rudolphi, 1819a, 21, 234–235.

1819: *Cucullanus*. 1845: *Dacnitis*.

abbreviatus Villot, 1874, Jan., 57.

1874: *Gordius*. 1897: *Parachordodes*.

Acanthocephala Rudolphi, 1808a, 198. Ordinal name.

Acanthocephali Burmeister, 1837a, 527. Family name.

Acanthocephalos Goeze, 1782a, 141; for *Acanthocephalus*.

Acanthocephalus Kœlreuter 1771a, 499–500, 503, pl. 26, figs. 5, a–d. Type *Echinorhynchus anguillæ* Mueller, designated by Luehe, 1905, 329.

[Not *Acanthocephalus* Lap., 1833, hemipteron.]

Kœlreuter gives no specific name, but the parasite in question is clearly a thornheaded worm reported for *Cyprinus rutilus*, adhering to the intestinal wall. See also *Echinorhynchus lavareti* Rudolphi, 1809a, 313.

Acanthocheilonema Cobbold, 1870b, 9–14. *A. dracunculoides* Cobbold, 1870b, 10–14, only species, hence type.

Acanthocheilus Molin, 1858, 154–155. *A. quadridentatus* Molin, 1858, 155, only species, hence type.

[Not *Acanthocheila* Stål, 1860, hemipteron; *Acanthochila* Stål, 1873, for *Acanthocheila*.]

Acanthopharynx Marion, 1870, 34–37. Type species probably *A. affinis*.

perarmata Marion, 1870, 34–35, pl. K [26], figs. 1–1f. ♀

oculata Marion, 1870, 35, pl. K [26], figs. 2–2c. ♀

striatipunctata Marion, 1870, 35–36, pl. K [26], figs. 3–3c. ♀

affinis Marion, 1870, 36, pl. K [26], figs. 4–4b. ♂ ♀

There seems to be no evidence that males were examined for the first three species.

- Acanthophorus* von Linstow, 1876, 5-6. Type species? *A. tenuis*. See *Tropidocerca*.
 [Not *Acanthophorus* Serv., 1832, coleopteron; *Acanthophora* Soll., 1873, protozoon; *Acanthophora* Hulst, 1896, insect; *Acanthophorys* Edw., 1865, crustacean.]
- tenuis* von Linstow, 1876, 5-6, pl. 1, figs. 7-9. ♂
- horridus* von Linstow, 1876, 6, pl. 1, figs. 10-12. ♂
- Acanthosoma* Mayer, 1844, 409-410. *A. chrysalis* Mayer, 1844, 409-410, pl. 10, figs. 5-8, only species, hence type. A larval dipteran which has been interpreted as a roundworm
- [Not *Acanthosoma* Curt., 1824, hemipteron; *Acanthosoma* Owen Ross, 18—, crustacean; *Acanthosoma* De K., 1842, fish.]
- Acanthrus* Acharius, 1780, 49-55. *A. sipunculoides* Acharius, 1780, 49-55, pl. 2, figs. 1-9, only species, hence type.
- [Not *Acanthurus* Eichoff, 1886, insect.]
- acanthura* Diesing, 1851a, [591]; *spinicauda* Diesing, 1851a, 188, renamed.
- 1851: *Ascaris*. 1860: *Oxyuris*. 1861: *Pharyngodon* (type).
- acer* Bastian, 1865c, 156-157, pl. 13, figs. 187-188.
- 1865: *Theristus* (type).
- aceti* Mueller, 1783, 162; and Dugès, 1826a, 226. See also *glutinis*, *anguillula*, and *Anguillula*.
- [1767: *Chaos redivivum* in part.] [1773: *Vibrio anguillula* in part.] 1783: *Vibrio*. 1786: *Anguillula* Mueller. 1803: *Vibrio* [only species in Blumenbach]. 1815: *Gordius*. 1838: *Anguillula* Ehrenberg. 1845: *Rhabditis*. 1865: *Anguillula*, 1828 [type, according to Bastian]. 1866: *Leptodera*. See p. 34.
- Acheilostomi* Diesing, 1851a, 264. Section of *Filaria*, with 21 species.
- acipenseri* Wagner, 1867 (probably later), 6. [Not accessible to us.]
- 1867: *Cystopsis* (probably type, see p. 98). 1875: *Cytoopsis*. 1902: *Cystoopsis*. 1902: *Cystoopsis*.
- Acroboles* Linstow, 1877, 2-3. *A. ciliatus* Linstow, 1877, 2-3, only species, hence type.
- [Not *Acrobela* Foerster, 1862, hymenopteron; *Acrobelus* Stål, 1869, hemipteron.]
- Acuaria* Bremser, 1811a, 26. Type *Spiroptera anthuris*, established by Rudolphi, 1819a, 244.
- 1819: *Spiroptera* Rudolphi, 1819a, 22-29, 235-255. *Acuaria* renamed, hence same type.
- 1819: *Anthuris* Rudolphi, 1819a, 244. *Acuaria* renamed, hence same type; also type by absolute tautonymy.
- 1845: *Dispharagus* Dujardin, 1845a, 42, 69-82. Type by inclusion, *Spiroptera anthuris*.
- For discussion of this very complicated case see p. 48.
- aculeatus* Curling, 1839a, 274-287, pl. 4, figs. 1-5.
- 1839: *Dactylius* (type).
- acuminata* Molin, 1860, 930.
- 1860: *Spiroptera*. 1897: *Oxyspirura*.
- acuminatus* Eberth, 1863a, 28-29, pl. 1, figs. 6-9.
- 1863: *Odontobius*. 1865: *Anticoma*.
- acuminatus* Bastian, 1865c, 120, pl. 10, figs. 87-88.
- 1865: *Plectus*.
- acus* Dujardin, 1845a, 264-265.
- 1845: *Stenodes* (type).
- acuta* Diesing, 1851a, 277-278; includes *Filaria colymbi* Rudolphi, 1819a.
- 1851: *Filaria*. 1861: *Dicheilonema*.
- acutissima* Molin, 1860, 332-333.
- 1860: *Subulura* (type).

acutum Molin, 1861, 449.

1861: *Esophagostomum*.

acutus Dujardin, 1845a, 105.

1845: *Proleptus* (type).

aqualis Molin, 1858, 383-384.

1858: *Filaria*. 1861: *Solenonema*.

aerophilum Creplin, 1839a, 278-279.

1839: *Trichosomum*. 1845: *Eucoleus* (probably type).

affine Leidy, 1856, 53.

1856: *Spironoura*. 1861: *Spirura*.

affinis Marion, 1870, 36, pl. K, fig. 4.

1870: *Acanthopharynx* (probably type).

Agamomermis Stiles, 1903, 15-17.

culicis Stiles, 1903, 15-17.

Agamomermis is a collective group for immature *Mermis*-like worms, which have not developed to a stage permitting a definite generic determination. Such a group has no type species.

Agamonema Diesing, 1851a, 78, 116-122. A collective group for immature nematodes in fish, and as such it has no type species. Original species:

bicolor (Creplin, 1825) Diesing, 1851a, 116.

papilligerum (Creplin, 1846) Diesing, 1851a, 116.

capsularia (Rudolphi, 1802) Diesing, 1851a, 116-117. Includes *Filocapsularia communis* Deslongchamps, 1824q, type.

ovatum (Zeder, 1803) Diesing, 1851a, 117-118.

cysticum (Rudolphi, 1819) Diesing, 1851a, 118.

(Species 6 to 24 are given as species inquirendæ.)

Agamonematodum Diesing, 1861a, 727. A collective group for immature nematodes, and as such it has no type species. Original species:

alauseæ (Molin, 1859) Diesing, 1861a, 727.

pagamelli (Molin, 1859) Diesing, 1861a, 727.

Agchylostoma Dubini, 1843a, 5-13. *A. duodenale* Dubini, 1843a, 5-13, only species, hence type. There exist the following variations in spelling:

1845: *Ancylostoma* Creplin, 1845a, 325. *Agchylostoma* renamed.

1846: *Anchylostoma* "delle Chiaje, 1846a, 399." *Agchylostoma* renamed.

1851: *Ancylostomum* Diesing, 1851a, 321-322. *Agchylostoma* renamed.

1851: *Ancylostomum* Diesing, 1851a, 82. *Agchylostoma* renamed.

1877: *Anhylostoma* Parona & Grassi, 1877, 192. Misprint.

1879: *Anchylostoma* Bozzolo, 1879b, 369-370. *Agchylostoma* renamed.

1883: *Anghylostoma* La Clinica de Malaga, 1883, 309.

1885: *Ankylostoma* Lutz, 1885, 2295-2350, 2467-2506. *Agchylostoma* renamed.

1886: *Ankylostoma* Leichtenstern, 1886, Mar. 18, 173; Apr. 8, 238. *Agchylostoma* renamed.

1895: *Ankylostomum* Stossich, 1895, 21-25. *Agchylostoma* renamed.

1897: *Anchylostamum* Mœhlau, 1897, 573. Misprint.

1903: *Anchylostomia* Henderson, 1903a, Mar., 126. Misprint.

agile Leidy, 1849, Oct., 230-231.

1849: *Streptostoma* (type). [1849: *Aorurus* (? type); see also *attenuatum*.]

1853: *Streptostomum* (type).

agilis Rudolphi, 1819a, 67, 316-317.

1819: *Echinorhynchus*. 1892: *Neorhynchus*.

agilis Marion, 1870, 14-15, pl. B, fig. 1.

1870: *Amphistenus* (? type).

agilis Verrill, 1879, Nov. 5, 187-188.

1879: *Nectonema* (type).

Agriostomum Railliet, 1902, 107-108, 110. *A. vryburgi* Railliet, 1902, 107-108, only species, hence type.

agrostidis Bastian, 1865c, 128; includes "*Vibrio graminis* Steinbuch" and *Anguillula graminearum* (in part) Diesing.

1865: *Tylenchus*.

agrostis Steinbuch, 1799, 233-253.

1799: *Vibrio*. [1838: *Anguillula*.] [1859: *Anguillulina*.] [? 1865: *Tylenchus*.]

Alaimus de Man, 1880, 2-3. Type species *A. primitivus*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.

primitivus de Man, 1880, 2-3. ♂ ♀

dolichurus (de Man, 1876) de Man, 1880, 3. ♂ ♀

alata Rudolphi, 1819a, 29-30, 256-257.

1819: *Physaloptera*.

alatus R. Leuckart, 1848, 26-28, pl. 2, figs. 3, A-D.

1848: *Strongylus*. 1848: *Pharurus* (type). [1851: *Prosthecosacter*.]

alatus Wedl, 1862, 470-471, pl. 2, figs. 20-22.

1862: *Thelandros* (type).

alause Molin, 1859, 31-32.

1859: *Nematoideum*. 1861: *Agamonematodum*.

albidum Bastian, 1865c, 143-144, pl. 11, figs. 154-155.

1865: *Phanoderma*.

alfredi Camerano, 1894b, June, 1-3.

1894: *Gordius*. 1897: *Parachordodes*.

Allantinema R. Leuckart, 1884, 320. Misprint for *Allantonema*.

Allantonema R. Leuckart, 1884, 320. *A. mirabile* R. Leuckart, 1884, 320, only species, hence type.

1884: *Allantinema* Leuckart, 1884, 320. Misprint.

allodapa Creplin, 1853b, 61-64; = *typica* Diesing, 1861a, 644.

1853: *Oxyuris*. [1861: *Allodapa* (type).]

Allodapa Diesing, 1861a, 614, 644. *A. typica* Diesing, 1861a, 644, only species, hence type; = *Oxyuris allodapa* Creplin, 1853, renamed. Also type by absolute tautonymy.

[Not *Allodapa* Brunn, 1878, orthopteron; *Allodape* Lep. Serv., 1825, hymenopteron; *Allodapus* Fieb., 1861, hymenopteron.]

Alloionema Schneider, 1859, 25. Sept., 176-177. *A. appendiculatum* Schneider, 1859, 177, only species, hence type.

alpestris Villot, "1884, 44-45." [Not accessible to us.]

"1884: *Gordius*." 1897: *Parachordodes*.

ambigua Rudolphi, 1819a, 19, 229-230.

1819: *Oxyuris*. 1845: *Passalurus* (type).

ambigua Bastian, 1865c, 98, pl. 9, figs. 14-15.

1865: *Monhystera*.

Amblyonema Linstow, 1898, 470-471. *A. terdentatum* Linstow, 1898, 470-471, pl. 35, figs. 12-14, only species, hence type.

Amblyura Hemprich & Ehrenberg, 1828a, unpag. Type species probably *A. serpentulus*, see p. 66.

serpentulus (Mueller, 1773) Hemprich & Ehrenberg, 1828a, pl. 2, fig. 14. ♂ ♀ *gordius* (Mueller, 1786) Hemprich & Ehrenberg, 1828a. [Very brief mention.]

americana Stiles, 1902, May 10, 777-778.

1902: *Uncinaria*. 1903: *Uncinaria* (*Necator* [type]). 1904: *Necator* (type).

- Amphistenus* Marion, 1870, 14-16. Type species? *A. agilis*, by page precedence.
 [Not *Amphisternus* Germ., 1843, coleopteron.]
agilis Marion, 1870, 14-15, pl. B, figs. 1-1g. ♀
pauli Marion, 1870, 15-16, pl. B, figs. 2-2b. ♀
anacanthura Molin, 1860, 966-967.
 1860: *Spiroptera*. 1897: *Oxyspirura*.
anatis Schrank, 1790, 119.
 1790: *Trichocephalus*. [1803: sub *Capillaria tumida* (type).] [1809: sub *Trichocephalus capillaris*.] [1819: sub *Trichosoma brevicolle*.]
Anchilostoma Bozzolo, 1879b, 17 giugno, 369-370. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
Anchylostamum Mœhlau, 1897, Mar., 573. Misprint for *Anchylostoma*.
Anchylostoma "delle Chiaje, 1846a, 399." *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
Anchylostoma Dubini, 1850a, 102-112. *Agchylostoma* renamed.
Anchylostomia Henderson, 1903a, Mar., 126. Misprint for *Anchylostoma*.
Anchylostomum Diesing, 1851a, 321-322. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
Ancylostoma Creplin, 1845a, 325. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
 [Not *Ancylostomia* Ragonot, 1893, insect.]
Ancylostomum Diesing, 1851a, 82. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
Ancyracanthopsis Diesing, 1861a, 670-671. *A. bilabiata* (Molin, 1860) Diesing, 1861a, 671, only species, hence type; = *Ancyracanthus bilabiatus* Molin.
Ancyracanthus Diesing, 1838a, 189; 1839a. *A. pectinatus* Diesing, 1838a, 189, only species, hence type; nomen nudum except for habitat; renamed *A. pinnatifidus* Diesing, 1839a, 227-229, pl. 14, figs. 21-27.
 1898: *Ancyracanthus* Zool. Rec. (1897), 1898, v. 34, Verm., 42. Misprint.
Ancyrocephalus Creplin, 1839a, 292. *A. paradoxus* Creplin, 1839a, 292, only species, hence type. Creplin placed this genus among the trematodes. See also Linstow, 1878, 210.
androphora Nitzsch, 1821, 48-49.
 1821: *Ascaris*. 1821: *Hedruris* (type).
Anghylostoma La Clinica de Malaga, 1883, 309. For *Agchylostoma*, hence type *duodenale*.
Angiostoma Dujardin, 1845a, 244, 262-263. Type species *A. limacis*. See p. 34.
 1845: *Angiostomum* Dujardin, 1845a, 3, 653.
 1851: *Angiostomum* Diesing, 1851a, 79, 138-139.
 [Not *Angystoma* Schumacher, 1817, 229 (mollusk), for *Angystoma* Klein, 1753, mollusk, changed to *Angiostoma* Agassiz, 1846; *Angystoma* Risso, 1826, 226 (supergeneric).]
entomelas Dujardin, 1845a, 262-263, pl. 4, fig. C. ♂ ♀
limacis Dujardin, 1845a, 263, pl. 4, fig. B. ♂ ♀ To *Leptodera angiostoma* Schneider, 1866, 157. Type by designation (Schneider) and by absolute tautonymy. See p. 34.
Angiostomum Dujardin, 1845a, 3, 653. Corrected to *Angiostoma* Dujardin, 1845a, 653.
anguilla Lockwood, 1872, Aug., 449-454, figs. 120-122.
 1872: *Koleops* (type).
anguilla Mueller, 1780, 2, pl. 69; "1784, 84."
 1780: *Echinorhynchus*. 1905: *Acanthocephalus* (type).

- Anguillina* Hammerschmidt, 1838a, 352, 358. *A. monilis* Hammerschmidt, 1838a, 358, pl. 4, fig. a, only species, hence type. Hammerschmidt states that there are three species in this genus, but he mentions only one.
[Not *Anguillina* Rafinesque, 1815, 91, fish, subfamily; "*Anguillina*" Scudder, 1884, 19, for *Anguillina*.]
- Anguillola* Grassi & Calandruccio, 1884a, 22 nov., 492-494. Misprint for *Anguillula*; for *Rhabdonema*.
- Anguillula* "Mueller, 1786, 63." Type by absolute tautonymy *Vibrio anguillula* Mueller, 1773 [= *Chaos redivivum* Linnaeus, 1767, renamed], confined to *Vibrio glutinis* by Mueller, 1783, see discussion, p. 34.
- Anguillula* Hemprich & Ehrenberg, 1828a. Type species *fluvialis*=*fluviatilis*, by present designation, based upon page precedence, elimination, and other factors, see p. 34. Bastian's designation of *aceti* as type can not be admitted, see p. 37.
- anguillula* Mueller, 1773, 41. Equals *redivivum*, 1767, renamed. See *Anguillula*. 1773: *Vibrio*. [1786: *Anguillula* (type).] 1788: *Chaos*.
- Anguillulina* Gervais & van Beneden, 1859b, 101-103. Type species probably *A. tritici*. *tritici* (Steinbuch, 1799, or Bauer, 1823) Gervais & van Beneden, 1859b, 102. To *Tylenchus* by Bastian, 1865c; returned to *Anguillula* by Railliet, 1893.
- dipsaci* (Kuehn, 1857) Gervais & van Beneden, 1859b, 102-103. To *Tylenchus* by Bastian, 1865c.
- [? *Vibrio agrostis* Steinbuch, 1799, 233-253.] Gervais & van Beneden, 1859b, 101.
- [? *Vibrio phalaridis* Steinbuch, 1799, 253-257.] Gervais & van Beneden, 1859b, 101.
- [? *Vibrio graminis* Steinbuch in Naturf., 28, 233, & Analecten 97, 135]; to *Tylenchus* as *T. agrostidis* by Bastian, 1865c, 128.
- Anchylostoma* Parona & Grassi, 1877, 192. Misprint for *Anchylostoma*.
- Anisakis* Dujardin, 1845a, 151, 220-230. Type species? "*A. simplex* Rudolphi," misdetermined; = *A. dussumierii*. Subgenus of *Ascaris*.
- Ascaris distans* Rudolphi, 1809a, 128-129. ♂ ♀
- Ascaris simplex* Rudolphi, 1809a, 170. ♂ ♀
- Ankylostoma* Lutz, 1885, 2295-2350, 2467-2506; Leichtenstern, 1886, Mar. 18, 173; Apr. 8, 238. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
- Ankylostomum* Stossich, 1895, 21-25. *Agchylostoma* renamed, hence type species *Agchylostoma duodenale*.
- annulata* de Man, 1880, 59.
1880: *Macroposthonia* (type).
- annulosum* Dujardin, 1845a, 27.
1845: *Calodium* (?type).
- Anoplostoma* Buetschli, 1874b, 272-273. Type species *Symplocostoma vivipara* Bastian, 1865c, 133-134, pl. 11, figs. 123-125; designated type of genus by Buetschli, 1874b, 272.
- anoura* Dujardin, 1845a, 221-222.
1845: *Ascaris*. 1845: *Ascaris* (*Polydelphis* [type]).
- antarcticus* de Man, 1904, 44.
1904: *Plectus* (*Plectoides*).
- Anthraconema* zur Strassen, 1904, 301-346, figs. a-j, pls. 15-16. Type by designation of zur Strassen in personal letter to Stiles, dated Oct. 12, 1904, *A. weismanni*. *weismanni* zur Strassen, 1904, 302-346, figs. b, c, e, h, pl. 15, figs. 1-4; pl. 16, figs. 6-9. More common species.
- sagax* zur Strassen, 1904, 302-346, figs. a, d, g, j, pl. 15, fig. 5.
- Anthrocephali* Encycl. Americana, v. 7, 1903, Art. Entozoa. For *Acanthocephali*.

Anthuris Rudolphi, 1819a, 244. Type by absolute tautonymy *Spiroptera anthuris* Rudolphi, 1819a, 25. It seems positive that Rudolphi based his generic term *Anthuris* on this species.

anthuris Rudolphi, 1819a, 25.

[1811: *Acuaria* (type).] 1819: *Spiroptera* (type). 1819: *Anthuris* (type). 1845: *Dispharagus* (type). 1866: *Filaria*.

Anticoma Bastian, 1865c, 141-142. Type *A. eberthi*, designated by Bastian in letter to Stiles, dated March 22, 1904.

eberthi Bastian, 1865c, 141, pl. 11, figs. 143-145. ♂ ♀

limalis Bastian, 1865c, 141-142, pl. 11, figs. 146-148. ♀

pellucida Bastian, 1865c, 142, pl. 11, figs. 149-150. ♀

acuminata (Eberth, 1863) Bastian, 1865c, 142. ♂ ♀ [Not examined by Bastian.]

Antoplectus see sub *Autoplectus* Balsamo-Crivelli, 1843b.

Aorurus Leidy, 1849, 230, 231. Type species? *Streptostoma agile*.

Leidy divided *Aorurus* into two subgenera, namely, *Streptostoma* (only species, hence type *agile* ♀) and *Thelastoma* (only species, hence type *attenuatum* ♀).

Leidy, 1850, 100-102, still retains the same order, namely, one genus divided into two subgenera. Either *agile* or *attenuatum* may be taken as type.

Aphanolaimus de Man, 1880, 5-6. *A. attentus* de Man, 1880, 6, only species, hence type.

Aphelenchus Bastian, 1865c, 93, 121-124. Type species *A. avena*, designated by Bastian in letter to Stiles, dated March 22, 1904.

avena Bastian, 1865c, 122-123, pl. 10, figs. 97-98. ♀

villosus Bastian, 1865c, 123, pl. 10, figs. 99-101. ♂ ♀

parietinus Bastian, 1865c, 123, pl. 10, figs. 102-103. ♀

pyri Bastian, 1865c, 123-124, pl. 10, figs. 103a-103c. ♂ ♀

apiarium Bosc, 1812a, 72-73, pl. 1, fig. 3.

1812: *Dipodium* (type).

Apororhynchus Shipley, 1899, Aug., 361. *A. hemignathi* (Shipley, 1896), only species, hence type.

1896: *Arhynchus* Shipley, 1896, 207-218. [Not *Arhynchus* Dejean, 1834, coleopteron.]

appendiculatum Schneider, 1859, 25. Sept., 177.

1859: *Alloionema* (type).

appendiculatus Molin, 1861, 544-547.

1861: *Kalicephalus*.

Aprocta von Linstow, 1883, 289-290. *A. cylindrica* von Linstow, 1883, 289-290, pl. 7, fig. 21, only species, hence type.

[Not *Aprocta* Diesing, 1850a, 478, 481, suborder. Diesing's use of this name in subordinal sense does not invalidate *Aprocta*, 1883.]

aquaticus Linnæus, 1758a, 647.

1758: *Gordius* (type).

aquaticus de Man, 1880, 60.

1880: *Rhabdolaimus*.

aquatilis Dujardin, 1845a, 68, pl. 3, fig. E.

1845: *Filaria*. 1889: *Mermis*. [1898: *Paramermis*.]

Aracolaimus de Rouville, 1903, 11. Dec., 1529. Probably misprint for *Aræolaimus*.

Aræolaimoides de Man, 1893, 86. *Aræolaimus* (*Aræolaimoides*) *microphthalmus* de Man, 1893, 86-89, pl. 5, fig. 4, only species, hence type.

Aræolaimus de Man, 1888, 14-17. Type species *A. bioculatus*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.

1888: *Aræolaimus* de Man, 1888, 15. For *Aræolaimus*.

bioculatus (de Man, 1877) de Man, 1888, 15. ♂ ♀

[*mediterranea* de Man, 1877]; see also de Man, 1888, 15. ♂ ♀

elegans de Man, 1888, 16-17, pl. 1, fig. 9. ♂ ♀

arcuata Cobbold, 1874h, 85–87, figs. a–g.

1874: *Trichonema* (type).

argillaceus Linnæus, 1758a, 647.

1758: *Gordius*.

Arhynchus Shipley, 1896, 207–218. *A. hemignathi* Shipley, 1896, 207–218, pl. 12, figs. 1–15, only species, hence type. Renamed *Apororhynchus*, 1899.

[Not *Arhynchus* Dejean, 1834, coleopteron; *Arrhynchus* Philippi, 1871, insect.]

armata Rudolphi, 1801, 57. See also *ascarioides* Gœze, 1782a; *cucullanus* Schrank, 1788.

[1800: *Gæzia*.] 1801: *Gæzia* (type). 1803: *Cochlus* (type).

Arceolaimus de Man, 1888, 15. Misprint for *Aræolaimus*.

Ascaridea Ehrenberg, 1831. This is given by Scudder, 1884, 29, as a supergeneric name; we have been unable to find it.

Ascaridia Dujardin, 1845a, 151, 214–220. Type species? *Ascaris truncata*. A subgenus of *Ascaris* containing

truncata (Zeder, 1803), ♂ ♀, including *Ascaris hermaphrodita* Frœlich.

inflexa Rudolphi, 1819a, ♂ ♀, including *Fusaria reflexa* Zeder, 1800a [not *Fusaria inflexa* Zeder, 1800] and *Ascaris funiculus* Deslongchamps. See sub *reflexa*, *Heterakis vesicularis* (type).

gibbosa Rudolphi, 1809a, as doubtful; including *Fusaria strumosa* Zeder, 1800a.

perspicillum Rudolphi, 1809a, as doubtful.

compar Schrank, 1790, as doubtful; including *Ascaris lagopodis* Frœlich, 1802a.

maculosa Rudolphi, 1809a, ♂ ♀, including *Ascaris columbæ* Gmelin, 1790a.

Ascaris Linnæus, 1758a, 644, 648. Type by elimination and designation *Ascaris lumbricoides* Linnæus, 1758a. For discussion, see p. 60.

1780: *Stomachida* Pereboom, 1780, only species, hence type *Stomachida vermis* = *Ascaris lumbricoides*.

1800: *Fusaria* Zeder, 1800a; = *Ascaris* renamed, hence type species *Ascaris lumbricoides*.

1821: *Lumbricoides* Mérat, 1821, 225, type *vulgaris* = *lumbricoides*.

1896: *Ascoria* Huber, 1896a, 562. Misprint.

vermicularis Linnæus, 1758a, 648. To *Fusaria* by Zeder, 1803a; to *Oxyuris* by Bremser, 1819a.

lumbricoides Linnæus, 1758a, 648; = *Stomachida vermis* Pereboom, 1780; to *Fusaria* by Zeder, 1800a; = *Ascaris* renamed.

ascarioides Gœze, 1782a, 40, 134. See *armata* Rudolphi.

1782: *Cucullanus*. [1800: *Gæzia* (type).] [1801: *Cochlus* (type).] 1810: *Pri-onoderma* (type).

Ascaroides Barthélemy, 1858a, 41–48. *A. limacis* Barthélemy, 1858a, 41–48, pl. 5, figs. 8–15, only species, hence type.

Ascarophis van Beneden, 1871a, 92. Mentions *A. morrhue* (from *Gadus morrhua*), pl. 3, fig. 1, apparently type. See *Ascaropsis*.

Ascarops van Beneden, 1873b, 22. *A. minuta* van Beneden, 1873b, 22, pl. 5, figs. 6–11, only species, hence type.

Ascaropsis Power & Sedgwick, 1880. See *Ascarophis* van Beneden, 1871a.

Asconema R. Leuckart, 1886, 20. Dec., 743–746. *A. gibbosum* R. Leuckart, 1886, 743–746, only species, hence type. See *Atractonema*.

[Not *Askonema* Kent, 1870, Nov. 1, sponge.]

Ascoria Huber, 1896a, 562. Misprint for *Ascaris*, 1758.

Aspidocephalus Diesing, 1851a, 80, 208. *A. scoleciformis* Diesing, 1851a, 208, only species, hence type.

[Not *Aspidocephalus* Motsch, 1839, coleopteron, for *Aspicephalus*; not *Aspidocephala* Burmeister, 1837, crustacean (supergeneric name); not *Aspidocephali* Ritg., 1828, reptile (supergeneric name).]

- Atractis* Dujardin, 1845a, 230, 233, 654. *Ascaris dactyluris* Rudolphi, 1819a, only species, hence type.
- Atractonema* R. Leuckart, 1887, Apr. 25, 678-703, pl. 3, figs. 1-13; [= *Asconema* Leuckart, 1886 [not *Askonema* Kent, 1870], renamed]. Type species *A. gibbosum*.
- attentus* de Man, 1880, 6.
1880: *Aphanolaimus* (type).
- attenuata* Rudolphi, 1803, 3. See also *Filaria falconis* Gmelin, 1790a.
1803: *Filaria* (~~? type see also quadrispina Diesing, and mastix Gmelin~~).
- attenuata* Rudolphi, 1819a, 26.
[1811: *Acuaria*.] 1819: *Spiroptera*. 1845: *Dispharagus*.
- attenuatum* Leidy, 1849, 231.
1849: *Thelastoma* (type). [1849: *Aorurus*.] [1856: *Thelastomum* (type).]
- attenuatus* Dujardin, 1845a, 236.
1845: *Oncholaimus* (? type, see p. 121). 1851: *Enoplus*.
- Aucyracanthus* Zool. Rec. (1897), 1898, v. 34, Verm., 42. Misprint for *Ancyracanthus*.
- Aulolaimus* de Man, 1880, 30-31. *A. oxycephalus* de Man, 1880, 31, only species, hence type.
- australis* Cobb, 1894c, Apr. 13, 409-410, figs. 9, i-iv.
1894: *Bathylaimus* (type).
- Autoplectus* Balsamo-Crivelli, 1843b, 188. *A. protognostus* Balsamo-Crivelli, 1843b, 188, only species, hence type.
[Not *Autoplectus* Raffray, 1883, insect; see Zool. Rec. (1883), 1884, v. 20, Index, 2; Waterhouse, 1902, 40, gives this as *Antoplectus* (probably misprint).]
- avenae* Bastian, 1865c, 122-123, pl. 10, figs. 97-98.
1865: *Aphelenchus* (type).
- Axonolaimus* de Man, 1889, 3-4. Type species *A. spinosus*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.
spinosus (Buetschli, 1874) de Man, 1889, 3, 4. ♂ ♀ [See also de Man, 1888, 19.]
- filiformis* de Man, 1889, 3-4. ♂ ♀
- bacillata* Eberth, 1863a, 19-20, pl. 2, figs. 1-4.
1863: *Phanoglene*. 1865: *Leptosomatum*.
- barbata* Carter, 1859d, July, 43-44, pl. 3, fig. 32.
1859: *Urolabes*. 1865: *Symplocostoma*.
- barbiger* Nordmann, 1840, 664.
1840: *Phanoglene*.
- Bastania* Zool. Rec. (1893), 1894, v. 30, Verm., 56. Misprint for *Bastiania*.
- Bastiana* Scudder, 1882, 37. Misprint for *Bastiania*.
- Bastiania* de Man, 1876, 172-174. *B. gracilis* de Man, 1876, 172-174, pl. 11, figs. 43, a-c, only species, hence type.
1884: *Bastiana* Scudder, 1884, 37. Misprint for *Bastiania*.
- 1894: *Bastania* Zool. Rec. (1893), 1894, v. 30, Verm., 56. Misprint for *Bastiania*.
- Bathylaimus* Cobb, 1894c, Apr. 13, 409-410. *B. australis* Cobb, 1894c, 409-410, figs. 9, i-iv, only species, hence type.
- bicolor* Creplin, 1825a, 4-5.
1825: *Filaria*. 1851: *Agamonema*.
- bicuspis* Rudolphi, 1819a, 24, 240-241.
1819: *Spiroptera*. 1845: *Dispharagus*.
- bidens* Rudolphi, 1819a, 24, 240.
[1811: *Acuaria*.] 1819: *Spiroptera*. 1845: *Dispharagus*. 1866: *Ancyracanthus*.
- bifida* Fabricius, 1780a, 273; includes *Gordius atak* Mueller.
1780: *Ascaris*. [1801: *Ophiosstoma*.] 1803: *Ophiosstoma*. [?]: *Proboscidea*.

- bifida* Molin, 1858, 411-412.
1858: *Filaria*. 1861: *Dicheilonema*.
- bifurcata* Cobb, 1898a, Mar., 315, figs. 36, i-iv; [Apr.], 453, fig. 127.
1898: *Lepidonema* (type).
- bilabiata* Diesing, 1851a, 277; includes *Filaria sterna* Rudolphi, 1819a.
1851: *Filaria*. 1861: *Dicheilonema*.
- bilabiata* Molin, 1860, 343.
1860: *Ancyracanthus*. 1861: *Ancyracanthopsis* (type).
- "*bilinguis* Schrank, 1796, 231, n. 1, pl. 2, A, B." [Not accessible to us.]
1796: *Linguatula* (probably type). 1809: *Hamularia*. [1851: *Filaria nodulosa*.]
[1861: *Monopetalonema obtuse-caudatum*.]
- bioculata* Schultze, 1857, pl. 8, fig. 2.
1857: *Rhabditis*. 1865: *Chromadora*.
- bioculata* de Man, 1877, 107-108, pl. 8, figs. 13, a-d.
1877: *Spira*. 1888: *Arxolaimus* (type).
- bispinosa* Diesing, 1851a, 278.
1851: *Filaria*. 1861: *Dicheilonema*.
- blainvillii* Zenker, 1827, 53.
1827: *Netrorhynchus* (type).
- bombi* Dufour, 1837a, 9, pl. 1 A, fig. 3.
1837: *Sphaeruloria* (type).
- bothropis* Molin, 1861, 549; sp. inq.
1861: *Kalicephalus*.
- bothryophorus* Schuberg & Schræder, 1904, 22. Feb., 629-632.
1904: *Myenchus* (type).
- Brachynema* Cobb, 1893a, Oct., 811. *B. obtusa* Cobb, 1893a, 811, only species, hence type.
[Not *Brachynema* Fieb., 1861, hemipteron.]
- Brachynema* zur Strassen, 1892, Oct. 18, 655-747. *Filaria rigida* von Siebold, 1836, 33, only species, hence type.
- brevicaudata* Zeder, 1800a, 66-68.
1800: *Fusaria*. 1802: *Ascaris*. 1845: *Heterakis*. 1866: *Oxysoma* (probably type).
- brevicaudata* Mueller, 1894, 113, 116-117, pl. 7, fig. 2.
1894: *Strongyluris* (type).
- brevicaudatum* Marion, 1870, 24-25, pl. G, fig. 2.
1870: *Enoplostoma*.
- brevicaudatus* Dujardin, 1845a, 80.
1845: *Dispharagus*. 1851: *Histiocephalus*. 1891: *Dispharagus*.
- brevicaudatus* Cobb, 1898a, Apr., 440, 441, figs. 102-103.
1898: *Zoniolaimus*.
- brevicolle* Rudolphi, 1819a, 13; = *capillaris* Rudolphi, 1809a, 86, renamed.
[1803: *Capillaria tumida* (type).] 1819: *Trichosoma* (type).
- brevicollis* Cobb, 1898a, Mar., 311, figs. 29, i-iv.
1898: *Rhigonema* (type).
- brevipenis* Molin, 1860, 921.
1860: *Spiroptera*. 1897: *Oxyspirura*.
- brevipenis* Molin, 1861, 548-549.
1861: *Kalicephalus*.
- brevispinosus* Diesing, 1861a, 728.
1861: *Uracanthus* (type).
- brevisubulata* Molin, 1860, 959.
1860: *Spiroptera*. 1897: *Oxyspirura*.

britannicus de Man, 1889, 4-5.

1889: *Thalassironus* (type).

Bunonema Jägerskiöld, 1905, Feb. 28, 557-561, 1 fig. *B. richtersi* Jägerskiöld, 1905, 557-561, 1 fig., only species, hence type.

Bunostomum Railliet, 1902, Feb. 7, 108-109, 110. Type by original designation *B. trigonocephalum* (Rudolphi, 1809) Railliet, 1902, 108. Railliet proposed *Bunostomum* to replace *Monodontus* Molin, 1861, but he designated *B. trigonocephalum* type of *Bunostomum*. (See below, p. 121.)

cæca Bastian, 1865c, 169, pl. 13, figs. 239-241.

1865: *Chromadora*.

cæcus Bastian, 1865c, 163, pl. 13, figs. 213-214.

1865: *Cyatholaimus*.

Calodium Dujardin, 1845a, 4, 25-29. Type species? *C. annulosum*.

splenæcum Dujardin, 1845a, 25-26, pl. 1, fig. A. ♂ ♀

plica (Rudolphi, 1819) Dujardin, 1845a, 26-27. ♂ ♀

annulosum Dujardin, 1845a, 27. ♂ ♀ (From *Mus rattus* and *M. decumanus*.)

longifilum Dujardin, 1845a, 27-28. Only ♂.

ornatum (Dujardin, 1843) Dujardin, 1845a, 28. ♂ ♀

tenue Dujardin, 1845a, 28-29. ♂ ♀ (From *Columba domestica*.)

As the rat is one of the easiest animals to obtain, it will be better to select *C.*

annulosum as type, unless some author has already selected another species.

calvadosicus de Man, 1890, 190-192, pl. 5, fig. 10.

1890: *Oncholaimellus* (type).

Calyptonema Zool. Rec. (1876), 1878, v. 13, Verm., 18. See *Calyptronema*.

Calyptronema Marion, 1870, 12-13. *C. paradoxum* Marion, 1870, 12-13, pl. A, fig. 2, only species, hence type.

[1870: *Calyptonema* Marion. Misprint? Zool. Rec. (1876), 1878, v. 13, Verm., 18.]

Camacolaimus de Man, 1889, 8. *C. tardus* de Man, 1889, 8, only species, hence type.

candidus Mueller, 1776, 214. Renamed *acus* Rudolphi, 1802, 51.

1776: *Echinorhynchus*. [[?]: sub *Proboscidea versipellis*.]

Capillaria Zeder, 1800a, 5. Type by virtual tautonymy and page precedence *Trichocephalus capillaris* Rudolphi, 1809a; = *Capillaria tumida*.

[Not *Capellaria* Gistl., 1848; not *Capillaria* Haworth, 1828, lepidopteron.]

1819: *Trichosoma* Rudolphi, 1819a, 13-16, 219-223; = *Capillaria* Zeder, 1800a, renamed.

1839: *Trichosomum* Creplin, 1839a, 278; for *Trichosoma*.

tumida Zeder, 1803a, 61; from *Anas querquedula*; = *Trichocephalus anatis* Schrank,

1790, renamed; = *Trichocephalus capillaris* Rudolphi, 1809a, 86; including *Linguatula trichocephala* Schrank, 1797, 232, and *Capillaria tumida*; renamed *Trichosoma brevicolle* Rudolphi, 1819a, 13. Type by virtual tautonymy and page precedence.

semiteres Zeder, 1803a, 61. Renamed *Hamularia nodulosa* Rudolphi, 1809a, 84, and *Trichosoma longicolle* Rudolphi, 1819a, 221, including *Filaria gallinæ* Gmelin, 1790a, 3040, *Gordius gallinæ* (Gmelin), Tabl. encycl., *Linguatula unilinguis* Schrank, 1797, 231.

capillaris Rudolphi, 1809a, 86-87; = *anatis* Schrank, 1790, and *tumida* renamed.

[1790: *Trichocephalus anatis*] [1803: *Capillaria tumida* sub (type).] 1809: *Trichocephalus*. [1819: *Trichosoma brevicolle* sub (type).]

capillaris Molin, 1860, 349.

1860: *Spiroptera*. 1861: *Cheilospirura*.

capitatus Looss, 1900, 191-192.

1900: *Gyalocephalus* (type).

Capsularia Zeder, 1800a, 5, 7-15. Type by tautonymy and page precedence, *Ascaris capsularia* Rudolphi, 1802a; = *Capsularia salaris*. See p. 37.

[Not *Capsularia* Oken, 1815, coleopteron.]

salaris (Gmelin, 1790) Zeder, 1800a; renamed *Ascaris capsularia* Rudolphi, 1802, 27.

halecis (Gmelin, 1790) Zeder, 1800a; renamed *Filaria capsularia* Rudolphi, 1802, 3-5; renamed *Filocapsularia communis* Deslongchamps, in part *halecis capsularia* Rudolphi, 1802, 2-5; = *Capsularia halecis* renamed; see *Filocapsularia communis*.

[1800: *Capsularia*.] 1802: *Filaria*. [Sub *Filocapsularia communis* Deslongchamps, 1824q (type).]

capsularia Rudolphi, 1802, 27; = *Capsularia salaris* renamed.

[1800: *Capsularia* (type).] 1802: *Ascaris*. 1851: *Agamonema*.

Carnoya Gilson, 1898a, 335-369. *C. vitiensis* Gilson, 1898a, 335-369, 1 pl., figs. 1-23, only species, hence type.

catanensis Drago; ["1887a"] 1887b, 81-83. Parasitic oligochete.

1887: *Epithelphusa* (type).

caudispina Molin, 1858, 382-383, pl. 1, fig. 4.

1858: *Filaria*. 1861: *Dipetalonema* (probably type).

Cephalacanthus Diesing, 1853a, Jan., 34-35. Type species probably *C. monacanthus*.

[Not *Cephalacanthus* Lac., 1802, fish.]

monacanthus Diesing, 1853a, 35. Host *Tenebrio molitor*.

triacanthus Diesing, 1853a, 35. Host *Geotrupes stercorarius*.

cephalata Cobb, 1894c, Apr., 399-401, figs. 7, i-iv.

1894: *Platycoma* (type).

Cephalobus Bastian, 1865c, 94, 124-125. Type species *C. persegnis*, designated by Bastian in letter to Stiles, dated March 22, 1904.

persegnis Bastian, 1865c, 124-125, pl. 10, figs. 104-106. ♂ ♀

striatus Bastian, 1865c, 125, pl. 10, figs. 107-108. ♀

Cephalonema Cobb, 1893a, Oct., 825. *C. longicauda* Cobb, 1893a, 825, fig. 41, only species, hence type. See *Nanonema*.

[Not *Cephalonema*, Stimps. (? date), worm. See Scudder, 1884, 58.]

cephalopodum Diesing, 1851a, 353.

1851: *Fictitium* (type).

cephaloptera Molin, 1860, 956-957.

1860: *Spiroptera*. 1861: *Cheilospirura*. 1897: *Oxyspirura* (type).

Ceratospira Schneider, 1866, 29, 104, 108-109. *C. resiculosa* Schneider, 1866, 109, 1 fig, only species, hence type.

Cercosoma Brera, 1809a, 106-108. Larva of *Eristalis*.

ceti Roussel, 1834, 326-331.

1834: *Odontobius* (type).

cettensis de Rouville, 1903, 11. Dec., 1529.

1903: *Sabatieria* (type).

Chætia Hill, 1752a, 14, pl. 2. Pre-Linnæan, for *Gordius aquaticus*.

Chatosoma Claparède, 1863a, 88-89. *C. ophicephalum* Claparède, 1863a, 88-89, pl. 18, figs. 2-3, only species, hence type.

[Not *Chatosoma* Dej., ? date, coleopteron; *Chatosoma* Westwood, 1851, coleopteron; *Chatostoma* Tsch., 1845, fish; *Chetostoma* Rond., 1856, dipteron; *Chætotoqua* Motsch, coleopteron.]

Chaolaimus Cobb, 1893a, Oct., 821. *C. pellucidus* Cobb, 1893a, 821, fig. 39, only species, hence type.

Chaos Linnæus, 1767, 1074, 1326–1327. Type by absolute tautonymy *Chaos protheus* Linnæus, 1767; = *Volvox chaos* Linnæus, 1758a; = *Chaos chaos* (Linnæus, 1758) Stiles, 1905 [= *Amæba proteus*]. For discussion, see p. 38.

[Not *Chaus* Gray, 1843, mammal.]

chaos Linnæus, 1758a, 821. See also *proteus* and *protheus*.

1758: *Volvox*. [1767: *Chaos* (type).] [1773: *Vibrio*.] [1786: *Proteus*.] [1822: *Amiba* (type).] [1831: *Amæba* (type).]

Characostomum Railliet, 1902, 109–110. Type species *C. longemucronatum* (Molin, 1861). Railliet proposed this generic name as substitute for *Globocephalus* Molin, 1861, because of the existence of *Globicephalus* Lesson, 1828, mammal. He had previously (1895) proposed *Cystocephalus* as substitute, but this is preoccupied by *Cystocephalus* Léger, 1892. Since, however, *Globocephalus* and *Globicephalus* are two different combinations of letters, they are different, hence can not be identical. There is therefore no necessity for rejecting *Globocephalus*.

Cheilospirura Diesing, 1861a, 618, 683–686. Type species by present designation *C. hamulosa*.

1884: *Cheirospirura* von Drasche, 1884a, 213. Misprint.

posthelica (Molin, 1860) Diesing, 1861a, 683–684. ♂

quadrilocostata (Molin, 1860) Diesing, 1861a, 684. ♂ ♀

erecta (Molin, 1860) Diesing, 1861a, 684. ♂ ♀ See *Spiroptera anabatis*.

uncinipenis (Molin, 1860) Diesing, 1861a, 684–685. ♂ ♀ From *Rhea americana*.

hamulosa (Diesing, 1851) Diesing, 1861a, 685. ♂ ♀ (From *Gallus gallus*.)

To *Dispharagus* by Stossich, 1890.

longestriata (Molin, 1860) Diesing, 1861a, 685. ♂ ♀

cephaloptera (Molin, 1860) Diesing, 1861a, 686. ♂ ♀ To *Oxyspirura* by Stossich, 1897 (type).

capillaris (Molin, 1860) Diesing, 1861a, 686; sp. inq.

Cheilospirura hamulosa is here designated as type of *Cheilospirura*; upon the following grounds: (1) It is a more or less common and widespread species found in a food animal, hence it can be easily obtained; (2) it was examined by Diesing, the author of the genus; (3) it is the oldest of the original species of *Cheilospirura*; (4) as the generic name *Dispharagus*, 1845 (with which *hamulosa* is now usually combined), must drop as synonym of *Acuaria* 1811 (because of type by inclusion), a selection of *hamulosa* as type of *Cheilospirura*, 1861, now gives us a more or less well-known name for the *hamulosa* group.

Cheilostomi Diesing, 1851a, 264, 276–279. Section of *Filaria* with two subsections: *Dicheilostomi* and *Tricheilostomi*.

Cheiracanthus Diesing, 1838a, 189 [nomen nudum except for habitat]; 1839a, 221–227. Type species by inclusion *C. robustus*. See *Gnathostoma*.

[Not *Cheiracanthus* Agassiz, 1833, fish.]

robustus Diesing, 1838a, 189 [nomen nudum except for habitat]; 1839a, 222–225, pl. 14, figs. 1–7. ♂ ♀ See *Gnathostoma spinigerum*.

gracilis Diesing, 1838a, 189 [nomen nudum except for habitat]; 1839a, 225, pl. 14, figs. 8–11. ♂ ♀

Diesing (1839) gives *Gnathostoma spinigerum* Owen, 1837, as probable synonym of *Ch. robustus*.

Cheirospirura von Drasche, 1884a, 213. Misprint for *Cheilospirura*.

chlorurus de Man, 1880, 61–62.

1880: *Odontolaimus* (type).

- Choanolaimus* de Man, 1880, 28-29. *C. psammophilus* de Man, 1880, 29, only species, hence type.
- Chordodes* Creplin, 1847b, 161-165. *C. parasitus* Creplin, 1847b, 161-165, only species, hence type.
- Chromadora* Bastian, 1865c, 95, 167-170. Type *C. vulgaris*, designated by Bastian in letter to Stiles, dated March 22, 1904.
- 1886: *Euchromadora* de Man, 1886, 67-76; type *vulgaris*.
- vulgaris* Bastian, 1865c, 167-168, pl. 13, figs. 233-235. ♂ ♀ (Type of *Euchromadora* de Man, 1886.)
- nudicapitata* Bastian, 1865c, 168, pl. 13, figs. 230-232. ♂ ♀
- natans* Bastian, 1865c, 168-169, pl. 13, figs. 236-238. ♂ ♀
- cæca* Bastian, 1865c, 169, pl. 13, figs. 239-241. ♂ ♀
- filiformis* Bastian, 1865c, 169, pl. 13, figs. 242-244. ♂ ♀
- sabelloides* Bastian, 1865c, 169-170, pl. 13, figs. 245-246. ♂
- papillata* Bastian, 1865c, 170, pl. 13, figs. 247-248. ♂
- bioculata* (Schultze, 1857) Bastian, 1865c, 170. Sexes?
- ocellata* (Carter, 1859) Bastian, 1865c, 170. ♂ ♀
- Chromagaster* Cobb, 1894c, Apr. 13, 416-419. Type *C. purpurea* Cobb, 1894c, designated by Cobb in letter to Stiles, dated Dec. 15, 1903.
- [Not *Chromogaster* Lauterborn, 1893, worm.]
- 1902: *Chromogaster* Waterhouse, 1902, 75. For *Chromagaster*.
- nigricans* Cobb, 1894c, Apr. 13, 416-417. ♂
- purpurea* Cobb, 1894c, Apr. 13, 417-419, figs. 12, i-iv. ♂ ♀
- Chromogaster* Waterhouse, 1902, 75. For *Chromagaster*.
- chrysalis* Mayer, 1844, 409-410, pl. 10, figs. 5-8.
- 1844: *Acanthosoma* (type).
- ciliatus* von Linstow, 1877, 2-3.
- 1877: *Acrobeles* (type).
- cincta* Cobb, 1894c, Apr. 13, 390-391, figs. 2-3.
- 1894: *Tricoma* (type).
- cinctus* von Linstow, 1898, 469-470, pl. 35, figs. 3-11.
- 1898: *Hoplœcephalus* (type). 1898: *Echinonema* (type).
- Ciorhynchus* Zeder, 1803a, viii. Misprint for *Liorhynchus*.
- cirratus* Bastian, 1865c, 119, pl. 10, figs. 81-82.
- 1865: *Plectus*.
- cirratus* Eberth, 1863a, 34-35, pl. 2, figs. 20-22; pl. 4, fig. 17; pl. 5, fig. 4.
- 1863: *Enoplus*. 1891: *Dipeltis*. 1875: *Discophora* (type).
- clausa* Rudolphi, 1819a, 29, 255-256, pl. 1, figs. 2-3.
- 1819: *Physaloptera* (type).
- claviceps* Zeder, 1800a, 130-131.
- 1800: *Echinorhynchus*. 1892: *Neorhynchus* (type). 1905: *Neoechinorhynchus* (type).
- Cloacina* von Linstow, 1898, Mar., 286-290. *C. dahli* von Linstow, 1898, 286-290, pl. 22, figs. 13-20, only species, hence type.
- Cochlus* Zeder, 1803a, 45-50. *Gæzia* Zeder, 1800a, renamed, hence type species *Cochlus armatus* = *Cucullanus ascaroides*.
- [Not *Cochlus* Humph., 1797, mollusk; Meg. (? date), mollusk.]
- cocksii* Bastian, 1865c, 143, pl. 11, figs. 151-153.
- 1865: *Phanoderma* (type).
- Coleops*. See *Koleops*.
- collaris* Hemprich & Ehrenberg, 1828a.
- 1828: *Crossophorus* (? type).
- columbæ* Schrank, 1788, 8.
- 1788: *Ascaris*. [1845: *Ascaris* (*Ascaridia*) *maculosa* (sub).]

- colymbi* Rudolphi, 1819a, 10. Nomen nudum except for host. See *acuta*.
 1819: *Filaria*. [1861: *Dicheilonema*.]
Comesoma Bastian, 1865c, 95, 158-159. Type *C. vulgaris* Bastian, 1865c, designated by Bastian in letter to Stiles, dated March 22, 1904.
vulgaris Bastian, 1865c, 158-159, pl. 13, figs. 195-197. ♂ ♀ Type.
profundi Bastian, 1865c, 159, pl. 13, figs. 198-200. ♂ ♀
communis Deslongchamps, 1824q, 399-400. See *capsularia* Rudolphi, 1802, 2-5.
 1824: *Filocapsularia* (type).
communis Buetschli, 1874b, 282-283, pl. 6, figs. 27, a-b; pl. 7, figs. 27, c-d.
 1874: *Spilophora*. 1889: *Desmodora* (type).
communis de Man, 1880, 34.
 1880: *Cylindrolaimus* (type).
communis de Man, 1880, 63.
 1880: *Diphtherophora* (type).
communis de Man, 1888, 12, pl. 1, fig. 7.
 1888: *Terschellingia* (type).
commutata Diesing, 1851a, 152. Includes "*Ascaris brevicaudata* Zeder" of Rudolphi, 1819a, 284; from *Bufo viridis*.
 1851: *Ascaris*. 1861: *Cosmocerca*. 1866: *Nematorxys*.
 "commutata Rudolphi," of Schneider, 1866, 113. See *commutata* Diesing.
compar Schrank, 1790, 120.
 1790: *Ascaris*. 1845: *Ascaris* (*Ascaridia*).
conica Molin, 1858, 412.
 1858: *Filaria*. 1861: *Dicheilonema*.
Conocephalus Diesing, 1861a, 616, 669. *C. typicus*, only species, hence type.
 [Not *Conocephalus* Thunb., 1812, orthopteron; Zenk., 1833, crustacean; Schöenh., 1838, coleopteron; Dum., 1853, reptile.]
contorta Rudolphi, 1819a, 25, 242-243.
 1819: *Spiroptera*. 1866: *Spiroxys* (type). [1866: *Spiroxis* (type).]
contortus Rudolphi, 1803, 15-17.
 1803: *Strongylus*. 1898: *Hæmonchus* (type).
contortus Cobb, 1894c, Apr. 13, 414.
 1894: *Laxus*.
convolutus Kuhn, 1829b, 365-366.
 1829: *Strongylus*. 1851: *Prosthecosacter*.
copulatum Molin, 1861, 462-463.
 1861: *Eucyathostomum*.
coronata van Beneden, ["1858a"]; 1861a, 270-271.
 [1858: *Spiropterina* (type).] 1861: *Spiropterina* (type)
coronatus Molin, 1861, 533-534, pl. 6, figs. 1-2.
 1861: *Histiostomylus* (type).
coronatus Eberth, 1863a, 37-38, pl. 3, figs. 13-19.
 1863: *Enoplus*. 1865: *Leptosomatum*.
Coronilla van Beneden, 1871a, 6, 17, 18; [possibly earlier]. Type? *C. robusta*.
 [Not *Coronella* Laur., 1768, reptile; not *Coronella* Goldf., 1820, rotifer.]
sillicola van Beneden, 1871a, 6; [no description]. Host *Mustelus vulgaris*.
minuta van Beneden, 1871a, 17; n. sp.; [no description]. Host *Raja batis*.
robusta van Beneden, 1871a, 18, 19, pl. 3, figs. 2-7; n. sp. Hosts *Raja circularis* and *R. clavata*.
Corynosoma Luehe, 1904, Dec., 231; 1905, 342. Type by original designation *C. strumosum* (Rudolphi, 1802) Luehe, 1904, 231; 1905, 342.
Cosmocephalus Molin, 1858, 151-152. *C. diesingii* Molin, 1858, 151-152, only species, hence type.
 [Not *Cosmocephala* Stimps., 1857, worm.]

Cosmocerca Diesing, 1861a, 614, 645-646. *C. ornata* (Dujardin, 1845), only valid species, hence type.

1866: *Nematoxys* Schneider, 1866, 29, 111-113.

[Not *Cosmocercus* Dej., ? date, coleopteron; Thoms., 1864, coleopteron.]

ornata (Dujardin, 1845) Diesing, 1861a, 645. Type.

commutata (Diesing, 1851) Diesing, 1861a, 645-646; species inquirenda.

costata Bastian, 1865c, 166-167, pl. 13, figs. 228-229.

1865: *Spilophora*. 1889: *Monoposthia* (type).

costatus Rudolphi, 1819a, 647-648.

1819: *Strongylus*. 1845: *Sclerostoma*. 1851: *Diaphanocephalus*.

costellatus Dujardin, 1845a, 116.

1845: *Strongylus*. 1861: *Metastrongylus*.

crassa von Linstow, 1889, 392-396, pl. 22, figs. 2-8.

1889: *Mermis*. [1898: *Paramermis* (type).]

crassicauda Bellingham, 1845a, Jan., 476.

1845: *Trichosoma*. 1874: *Trichodes* (type). 1895: *Trichosomoides* (type).

crassiusculus Dujardin, 1845a, 235.

1845: *Enoplus*. 1865: *Mononchus*.

Crenosoma Molin, 1861, 435, 437-442. Type probably *C. striatum* (Zeder, 1800) Molin, 1861.

striatum (Zeder, 1800) Molin, 1861, 440-441, pl. 1, figs. 1-2.

semiarmatum Molin, 1861, 442. Includes *Strongylus decoratus* Creplin, 1847a,

289, and *Liorhynchus vulpis* Dujardin, 1845a, 283.

Unless *semiarmatum* has already been designated as type, it will be best to select *striatum* as such.

crinalis Wedl, 1855, 384-385, 394, pl. 3, figs. 18-20.

1855: *Dikentrocephalus* (type). [1861: *Dicentrocephalus*.]

Crino Lamarck, 1801, 339-340. *C. truncatus* Lamarck, 1801, only species, hence type.

[Not *Crino* Huebn., 1816, lepidopteron; Gistel, 1848, mollusk.]

Crino truncatus is based upon "Les Crinons" of Chabert, 1787a, 21-24, which is a heterogeneous group of roundworms found especially in the horse, and found also in dogs and other animals. Scudder attributes *Crino* to Chabert, 1782, but we have been unable to verify this.

cristata Frœlich, 1802a, 9-13, pl. 1, figs. 1-3.

1802: *Reticularia* (type). 1819: *Ophiostoma*. [1845: *Laphyctes* (type).]

cristatus Bastian, 1865c, 102, pl. 9, figs. 33-34.

1865: *Mononchus*.

Crossophorus Hemprich & Ehrenberg, 1828a. Type species ? *C. collaris*.

[Not *Crossophora* Meyrick, 1883, insect. See Zool. Rec. (1883), 1884, v. 20, Index, 4.]

collaris Hemprich & Ehrenberg, 1828a.

tentaculatus Hemprich & Ehrenberg, 1828a.

crucis Maupas, 1900, 578-582, pl. 26, figs. 4-10.

1900: *Macrolaimus* (type).

Ctenocephalus Linstow, 1904, Feb., 12-13 of reprint. *Ct. tiara* (Linstow, 1879) Linstow, 1904, Feb., 12-13 of reprint, pl. 2, figs. 23-27, only species, hence type.

See *Tanqua* and *Tetradenos*.

[Not *Ctenocephalus* Kol., 1857, dipteron.]

Cuculanus Bloch, 1782a, 34-35. For *Cucullanus*.

Cucullanus Mueller, "1777, 50, pl. 38, figs. 1-11 [not accessible];" see 1779, 99-101, where two species are given.

1782: *Cuculanus* Bloch, 1782a, 34-35. For *Cucullanus*.

1803: *Cucullus* Zeder, 1803a, 50. Misprint.

marinus Mueller, 1779, 99-101, for pl. 38, figs. 1-11. See also *foveolatus*.

Cucullanus Mueller—Continued.

lacustris (Mueller, 1776) Mueller, 1779, 100.

Dujardin (1845a, 245) has designated *Cucullanus elegans* as type. Not being able to obtain Mueller, 1777, we reserve judgment upon this case. Probably *marinus* should have been taken as type.

cucullanus Schrank, 1788, 50–51.

1788: *Tænia*. [1803: *Cochlus armatus* sub.] [1845: *Prionoderma ascaroides* sub.]

Cucullus Zeder, 1803a, 50. Misprint for *Cucullanus*.

culicis Stiles, 1903, 15–17.

1903: *Agamomermis*.

curvula Rudolphi, 1803a, 6–8. See *equi*.

1803: *Oxyuris* (type). [1816: *Oxyurus* (type).] 1860: *Lepturis* (type).

Cyatholaimus Bastian, 1865c, 95, 162–165. Type species *C. ocellatus*, designated by Bastian in letter to Stiles, dated March 22, 1904.

ocellatus Bastian, 1865c, 163, pl. 13, figs. 210–212a. ♂ ♀

cævus Bastian, 1865c, 163, pl. 13, figs. 213–214. ♀

ornatus Bastian, 1865c, 163–164, pl. 13, figs. 215–216. ♀

punctatus Bastian, 1865c, 164, pl. 13, figs. 217–218. ♂

striatus Bastian, 1865c, 164, pl. 13, figs. 219–220. ♂

gracilis (Eberth, 1863) Bastian, 1865c, 165. ♂ ♀ [Not observed by Bastian.]

Cyathostoma E. Blanchard, 1849a, March, 182–185. *Cyathostoma lari* Blanchard, 1849a, 182–185, pl. 7, fig. 5, only species, hence type.

This species is figured in Cuvier's *Régne Animale* (Masson's Ed., 1836–49), v. 20 (Zoophytes), pl. 25, figs. 6, a–b, and short description of figures given. It is also mentioned in *Voyage en Sicile*, Vers, pl. 23, fig. 5.

Cyathostomum Molin, 1861, 435, 451–455. *Cyathostomum tetracanthum* (Mehlis, 1831) Molin, 1861, only species, hence type. Renamed *Cylichnostomum*.

[Not *Cyathostoma* E. Blanchard, 1849a, nematode.]

cygni Molin, 1858, 154.

1858: *Echinocephalus*.

cygnoides Metschnikoff, 1867, Aug. 26, 542–543, pl. 31, figs. 9–11.

1867: *Rhabdogaster* (type).

Cylichnostomum Looss, 1902, 38, 86–132; = *Cyathostomum* Molin, 1861, renamed; hence type species *Cyathostomum tetracanthum*.

1861: *Cyathostomum* Molin, 1861 [not *Cyathostoma* Blanchard, 1849], type *C. tetracanthum*.

1903: *Cylicostomum* Gedælst, 1903a, 56, 92. For *Cylichnostomum*.

Cylicolaimus de Man, 1889, 1–2. *C. magnus* (Villot, 1875), only species, hence type.

Cylicostomum Gedælst, 1903a, 56, 92. For *Cylichnostomum*.

cylindrica von Linstow, 1883, 289–290, pl. 7, fig. 21.

1883: *Aprocta* (type).

Cylindrolaimus de Man, 1880, 34–35. Type species *C. communis*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.

communis de Man, 1880, 34. ♀ Type.

melancholicus de Man, 1880, 35. ♂ ♀

Cysstoopsis Linstow in Zykoff, 1902, 29, July, 452. Misprint for *Cystoopsis*.

cystica Rudolphi, 1819a, 634–635.

1819: *Filaria*. 1851: *Agamonema*.

Cystidicola G. Fischer, 1798b, mars, 98; 1798a, 306, fig. 7; 1799a, 95–100; pl. 2, figs. 1–6. *C. farionis* Fischer, 1798, only species, hence type. Also type by absolute tautonymy *Fissula cystidicola*.

Cystidicola G. Fischer—Continued.

1801: *Fissula* Lamarck. Type by inclusion *Cystidicola farionis*.

1801: *Ophiostoma* Rudolphi. Type by inclusion *Cystidicola farionis*.

1839: *Ophiostomum* Creplin. *Ophiostoma* Rudolphi, 1801, renamed.

cystidicola Lamarck, 1801, 339; = *farionis* Fischer, 1798, renamed.

[1798: *Cystidicola* (type).] 1801: *Fissula* (type). 1809: *Ophiostoma* (type).

1819: *Spiroptera*. 1845: *Dispharagus*. 1866: *Ancyracanthus*.

Cystocephalus Railliet, 1895a, 1302; = *Globocephalus* Molin, 1861, renamed; hence type *Globocephalus longemucronatus* Molin, 1861. See *Globocephalus* and *Characostomum*.

[Not *Cystocephalus* Léger, 1892.]

Cystopsis Zykoff, 1902, 15. Apr., 229-233. See *Cystopsis*.

Cystopsis Wagner, 1867, 6. [Not accessible to us; given on authority of Scudder, 1884, 90, who quotes from Marschall.] Probably *acipenseri* is only species, hence type. Not being able to obtain Wagner, 1867 (probably not published until later), we are unable to state which is the original orthography.

Cytoopsis Melnikoff (1872) 1875, 6. [Not accessible to us, see *Cystopsis*.]

Dachmius, 1862, Veterinarian, Lond. (416), v. 35, 4. s. (92), v. 8, Aug., 549-556. Misprint for *Dochmius*.

Dacnitis Dujardin, 1845a, 267-272. Type species? *D. esuriens* by virtual tautonymy, very common, and because of host, or? *spherocephala* by inclusion.

1900: *Dacnitis* von Linstow, 1900, 130. Misprint.

abbreviata (Rudolphi, 1819) Dujardin, 1845a, 269. ♂ ♀ Not examined by Dujardin, but cited with reserve.

globosa Dujardin, 1845a, 269. ♂ ♀ Includes *Cucullanus truttæ* Fabricius, 1794, 30-33, pl. 3, figs. 9-12, and *Cucullanus globosus* Rudolphi, 1809a, 115, p. p.

esuriens Dujardin, 1845a, 270. ♂ ♀ Includes? *Cucullanus heterochrous* Rudolphi, 1809a, 114, ?*Cucullanus heterochrous* Creplin, 1839a, 280, and *Cucullanus platensis*, and *Cucullanus soleæ* Rudolphi, 1819a, 22.

hians Dujardin, 1845a, 270-271. ♂ ♀ Includes? *Cucullanus foveolatus* Rudolphi, 1809a, 109, p. p., very common. Hosts *Pleuronectes soleæ* and *P. latus*.

spherocephala (Rudolphi, 1809) Dujardin, 1845a, 271-272. ♂ ♀ Includes *Pleurorinchus* Nau, 1787, 471, *Ascaris spherocephala* Rudolphi, 1809a, 188, *Ophiostoma spherocephalum* Rudolphi, 1819a, 61, 305.

squali Dujardin, 1845a, 272. ♀

Dactylius Curling, 1839a, 274-287. *D. aculeatus* Curling, 1839a, 274-287, pl. 4, figs. 1-5, only species, hence type. An annelid.

[Not *Dactylum* Megerle, in Scudder, 1884, mollusk.]

dactylura Dujardin, 1845a, 654; for *dactyluris* Rudolphi, 1819a.

1845: *Ascaris*. [1845: *Atractis* (type).]

dactyluris Rudolphi, 1819a, 40, 272, 581. See also *dactylura*.

1819: *Ascaris*. [1845: *Atractis* (type).]

Dacnitis von Linstow, 1900, 130. Misprint for *Dacnitis*.

dahlī von Linstow, 1898, 286-290, pl. 22, figs. 13-20.

1898: *Cloacina* (type).

Darylaimus von Linstow, 1878, 343. Misprint for *Dorylaimus*.

davainii Bastian, 1865c, 126, pl. 10, figs. 109-111.

1865: *Tylenchus* (type).

decorus Dujardin, 1845a, 78, pl. 3, fig. K.

1845: *Dispharagus*. 1851: *Histiocephalus*.

Deletrocephalus Diesing, 1851a, 82, 298. *D. dimidiatus* Diesing, 1851a, 298, only species, hence type.

- Demonema* Cobb, 1894c, Apr. 13, 392-394. *D. rapax* Cobb, 1894c, 393-394, figs. 5, i-iv, only species, hence type.
- dentatum* Molin, 1861, 459-460, pl. 1, fig. 7.
1861: *Eucyathostomum*.
- dentatus* Rudolphi, 1803a, 12-13.
1803: *Strongylus*. [1861: *Oesophagostomum subulatum* (sub) (type).]
- dentatus* Diesing, 1839a, 232-233, pl. 15, figs. 9-19.
1839: *Stephanurus* (type).
- denticulatus* Rudolphi, 1809a, 249-250, pl. 12, figs. 1-2. Includes *Gæzia inermis*.
1809: *Liorhynchus*.
- Dentolaimus* Zool. Rec. (1880), 1881, v. 17, Index, 4. Misprint for *Deontolaimus*.
- denudatus* Dujardin, 1845a, 81, pl. 3, fig. G.
1845: *Dispharagus*. 1851: *Histiocephalus*.
- Deontolaimus* de Man, 1880, 3-4. *D. papillatus* de Man, 1880, 4, only species, hence type.
1881: *Dentolaimus*. Misprint for *Deontolaimus* Zool. Rec. (1880), 1881, v. 17, Index, 4.
- depressus* Dujardin, 1845a, 112-113.
1845: *Strongylus*. 1861: *Metastrongylus*.
- Dermatorys* Schneider, 1866, 29, 123-124. *D. veligera* (Rudolphi, 1819) Schneider, 1866, 123-124, pl. 12, fig. 4, only species, hence type.
- Dermofilaria* Rivolta, 1884, 128-134. *D. irritans* Rivolta, 1884, 128-134, only species, hence type.
- Desmodora* de Man, 1889, 9. Type by original designation (de Man, 1889, 9) *D. communis* (Buetschli, 1874).
- Desmolaimus* de Man, 1880, 14-15. *D. zeelandicus* de Man, 1880, 14-15, only species, hence type.
- Desmoscolex* Claparède, 1863a, 89-90. *D. minutus* Claparède, 1863a, 89-90, pl. 18, figs. 4-7, only species, hence type.
- Diaphanocephalus* Diesing, 1851a, 82, 297-298. Type species? *D. strongyloides*.
strongyloides Diesing, 1851a, 297. ♂ ♀ *Strongylus galeatus* Rudolphi, 1819a, renamed. Host *Podinema teguixin*, Brazil.
costatus (Rudolphi, 1819) Diesing, 1851a, 297-298. ♂ ♀ Hosts *Lachesis rhombeata* and *Hylophis lævicollis*.
viperæ (Rudolphi, 1819) Diesing, 1851a, 298; sp. inq.
- Dicelis* Dujardin, 1845a, 106, 107-108. *D. filaria* Dujardin, 1845a, 108, pl. 3, fig. H, only species, hence type.
[Not *Dicelis* Stimps., 1857, worm.]
- Dicentrocephalus* Diesing, 1861a, 727; for *Dikentrocephalus* Wedl, 1855; hence type species *Dikentrocephalus crinalis*.
- Diceras* Rudolphi, 1810a, 258; = *Ditrachyceros* Hermann in Sultz, 1801, renamed.
Diceras rude Rudolphi, 1810a, 258-261, pl. 12, fig. 5, only species, hence type.
[Not *Diceras* Lamarck, 1805, mollusk; *Diceros* Gray, 1821, mammal.]
- Dicheilonema* Diesing, 1861a, 620, 707-709. Type species? *D. labiatum*. Diesing separated from *Filaria* the following species:
bifidum (Molin, 1858) Diesing, 1861a, 707. ♂ ♀
bilabiatum (Diesing, 1851) Diesing, 1861a, 707. ♀ Host *Sterna leucopareia*.
acutum (Diesing, 1851) Diesing, 1861a, 707-708. ♀ Hosts *Podiceps cristatus* and *P. cornutus*.
conicum (Molin, 1858) Diesing, 1861a, 708. ♀
labiotruncatum (Molin, 1858) Diesing, 1861a, 708. ♀
labiatum (Creplin, 1825) Diesing, 1861a, 708. ♂ ♀ Host *Ciconia nigra*.
rubrum (Leidy, 1856) Diesing, 1861a, 708. Sexes not given in 1856.

Dicheilonema Diesing—Continued.

fusiforme (Molin, 1858) Diesing, 1861a, 709. ♀

bispinosum (Diesing, 1851) Diesing, 1861a, 709. ♂ ♀ Hosts *Ophis*, *Thamnobius*, and *Boa*.

horridum (Diesing, 1851) Diesing, 1861a, 709. ♂ ♀

The subsection *Dicheilostomi*, 1851, which was later (1861) raised to generic rank, originally contained *Filaria labiata*, *F. physalura*, *F. obtuso-caudata*, *F. bilabiata*, *F. acuta*, *F. horrida*, and *F. bispinosa*. By the principle of virtual tautonymy *bilabiata* would first come into consideration as type, but such a choice is contraindicated by the lack of details given for this worm in both 1851 and 1861. The history of the genus strongly indicates *F. labiata* as type, unless there are other reasons why this should not be taken. *F. labiata* was the best-known species in 1851.

Dicheilostomi Diesing, 1851a, 264, 276–278. Subsection of *Cheilostomi* of *Filaria*. See *Dicheilonema*.

Dicyema Kœlliker, 1849d, 59–66. *D. paradoxum* Kœlliker, 1849d, 59–66, pl. 5, figs. 1–12, only species, hence type.

diesingii Molin, 1858, 151–152.

1858: *Cosmocephalus* (type).

Dikentrocephalus Wedl, 1855, 384–385, 394. *D. crinalis* Wedl, 1855, 384–385, 394, pl. 3, figs. 18–20, only species, hence type.

1861: *Dicentrocephalus* Diesing, 1861a, 727; for *Dikentrocephalus*.

dimidiatus Diesing, 1851a, 298.

1851: *Deletrocephalus* (type).

Diectophryme Scudder, 1882, 99. Misprint for *Diectophyme*.

Diectophyme Collet-Meygret, 1802a, 458–464, figs. 1–4. *D. renale* (Gœze, 1782) Stiles, 1901, only species, hence type.

1851: *Eustrongylus* Diesing, 1851a. Type *Diectophyme renale*.

1884: *Diectophryme* Scudder, 1884, 99. For *Diectophyme*.

Collet-Meygret used only the generic name.

Dipeltis Cobb, 1891c, Dec. 22, 155–158. Type *D. typicus* Cobb, 1891c. Renamed *Diplopeltis* Cobb, 1905.

[Not *Dipeltis* Packard, 1885, crustacean.]

minor Cobb, 1891c, 156.

cirrhatum (Eberth, 1863) Cobb, 1891c, 156–157. Type of *Discophora*, 1875 [not 1836].

typicus Cobb, 1891c, 157–158, figs. 9, i–iv.

In this genus Cobb has indicated the type by the specific name *typicus*, and this indication should stand despite the fact that *Dipeltis* includes the type (*cirrhatum*) of an earlier genus (*Discophora*). See p. 30. A personal letter from Cobb, dated March 28, 1904, shows us that it was Cobb's original intention to use *typicus* as type.

dipetala Molin, 1858, 373.

1858: *Filaria*. [1861: *Dipetalonema*.]

Dipetalonema Diesing, 1861a, 620, 703–704. Type probably *Filaria caudispina*.

caudispina (Molin, 1858) Diesing, 1861a, 703–704. ♂ ♀

inflexum Diesing, 1861a, 704. ♂ *Filaria dipetala* Molin, 1858, renamed.

mucronatum (Molin, 1858) Diesing, 1861a, 704. ♂

Probably *caudispina* should be taken as type, as it is the only species figured and of which both sexes were known; further, the material was abundant. See also 40.

Diphtherophora de Man, 1880, 62–63. *D. communis* de Man, 1880, 63, only species, hence type.

Diplogaster Max Schultze in Carus, 1857a, pl. 8, fig. 1. *D. micans* Schultze in Carus, 1857a, pl. 8, fig. 1, only species, hence type.

[Not *Diplogaster* Bigot, 1886, insect. Zool. Rec. (1886), 1887, v. 23, Insecta, 310.]

Diplolæmus (?date) for *Diplolaimus*. See Scudder, 1884, 100.

[Not *Diplolæmus* Bell, 1843, reptile.]

Diplolaimus von Linstow, 1876, 16–17. *D. gracilis* von Linstow, 1876, 16–17, pl. 2, fig. 38, only species, hence type.

Diplodon Molin, 1861, 435, 471–475. Type species *D. mucronatum* Molin, 1861. [Not *Diplodon* Spix, 1827, mollusk; not Nitzsch, 1840, bird; not *Diplodon* Marschall, 1873, for *Dioplon* Gervais, 1850; not *Diplodon* Roth, 1901, mammal; not *Dioplon* Gervais, 1850, mammal; not *Diplodonta* Bronn, 1831, mollusk; not *Diplodontus* Dug., 1834, arachnoid.]

mucronatum Molin, 1861, 474–475, pl. 3, fig. 1.

quadridentatum Molin, 1861, 475, pl. 3, fig. 2.

Molin examined and figured both species; the description of the male is based upon *D. mucronatum* and that of the female upon *D. quadridentatum*. As the male is more important in this group than the female, *mucronatum* should be taken as type. Further, Molin (1861, 471) practically states that *mucronatum* was his type.

Diplopeltis Cobb, 1905, in Stiles & Hassall, 1905, 101. New name for *Dipeltis* Cobb, 1891 [not Packard, 1885], proposed in letter to Stiles, dated Dec. 15, 1903. Type species *D. typicus*, designated by Cobb in letter to Stiles, dated March 28, 1904.

1891: *Dipeltis* Cobb, 1891c, 155–158 [not Packard, 1885, coleopteron].

Dipodium Bosc, 1812a, 72–73. *D. apiarium* Bosc, 1812a, 72–73, pl. 1, fig. 3, only species, hence type.

dipsaci “Kühn, 1857a, 129.”

1857: *Anguillula*. 1859: *Anguillulina*. 1865: *Tylenchus*.

Discophora Villot, 1875, 463. *Enoplus cirrhatus* Eberth, 1863a, 34–35, pl. 2, figs. 20–22; pl. 4, fig. 17; pl. 5, fig. 4, only species, hence type. See *Dipeltis* and *Diplopeltis*.

[Not *Discophora* Boisduval, 1836, lepidopteron; not *Discophorus* Chevrolat, 1880, insect.]

disjuncta Bastian, 1865c, 98, pl. 9, figs. 12–13.

1865: *Monhystera*.

dispar Bastian, 1865c, 97, pl. 9, figs. 1–2.

1865: *Monhystera*.

Dispharagus Dujardin, 1845a, 42, 69–82. Type by inclusion *Spiroptera anthuris*. For discussion of this very complicated case, see p. 48.

distans Rudolphi, 1809a, 128–129.

1809: *Ascaris*. 1845: *Ascaris* (*Anisakis*).

Ditrachycerosoma Brera, 1809a, 140–145, figs. 11–13. *Ditrachyceros* Hermann, 1801, renamed.

Ditrachyceros Hermann in Sultz, 1801, 1–52, pls. 1–2.

1801: *Dyrachyceros* Hermann in Sultz, 1801, 9. Corrected to *Ditrachyceros*.

1809: *Ditrachycerosoma* and *Ditrachycerosoma* Brera, 1809a, 140–145, figs. 11–13.

1810: *Ditrachyceros* Sultz, 1802, of Rudolphi, 1810a, 258.

1810: *Diceras* Rudolphi = *Ditrachyceros* renamed.

No specific name is used, but Sultz translates *Ditrachyceros* into *Bicorne rude*.

The name *Ditrachyceros* is used as a generic name.

Ditrachycerosoma Brera, 1809a, 140–145, figs. 11–13. *Ditrachyceros* Hermann, 1801, renamed.

Dochmius Dujardin, 1845a, 267, 275-279. Type by inclusion *Uncinaria vulpis* Frœlich. See *Uncinaria*.

1845: *Docmius* Dujardin, 1845a, 114. Misprint for *Dochmius*.

1861: *Dookmius* Molin, 1861, 471. Misprint for *Dochmius*.

1862: *Dachmius*. Misprint for *Dochmius*.

1878: *Dœmius*. Misprint for *Dochmius*.

1902: *Dohmius* Looss, 1902, Apr. 5, 424. Misprint for *Dochmius*.

Dochmius originally contained the only two species which up to 1845 had ever been placed in the genus *Uncinaria*. It is therefore a deliberate and unjustified renaming of a preexisting genus. On this account *Dochmius* drops into synonymy and takes the same type as *Uncinaria*.

Docmius Dujardin, 1845a, 114. Misprint for *Dochmius*.

Dœmius Sonsino, 1878, 616. Misprint for *Dochmius*.

Dohmius Looss, 1902, Apr. 5, 424. Misprint for *Dochmius*.

Dolicholaimus de Man, 1888, 31-34. *D. marioni* de Man, 1888, 32-34, pls. 2, 3, fig. 15, only species, hence type.

dolichura de Man, 1876, 177-179, pls. 11, 12, figs. 46, a-c.

1876: *Monhystera*. 1880: *Alaimus*.

dolichurus de Man, 1880, 32-33.

1880: *Prismatolaimus*.

Donylaimus von Linstow, 1876, 17. Misprint for *Dorylaimus*.

Dookmius Molin, 1861, 471. Misprint for *Dochmius*.

Dorylaimus Dujardin, 1845a, 230-231. Type species probably *D. stagnalis*.

1876: *Donylaimus* von Linstow, 1876, 17. Misprint for *Dorylaimus*.

1878: *Darylaimus* von Linstow, 1878, 343. Misprint for *Dorylaimus*.

stagnalis Dujardin, 1845a, 231, pl. 3, fig. C. ♂ ♀

marinus Dujardin, 1845a, 231, pl. 3, fig. D. ♀

Other things being equal, *stagnalis* should be type, as Dujardin describes both male and female of this species, while of *marinus* he describes only the female.

dorylaimus Marion, 1870, 27, pl. H, fig. 2.

1870: *Thoracostoma*.

dracunculoides Cobbold, 1870b, 10-14.

1870: *Acanthocheilonema* (type).

Dracunculus "Kæmpfer, 1712a, 524-535." Pre-Linnæan.

Dracunculus Kniphof, 1759, 12 [not accessible to us], or Gallandat, 1773a, 103-116, "*Dracunculus sive Vena medinensis*" only species, hence type. Also type by absolute tautonymy, see *dracunculus*. Some doubts may arise as to whether this was a valid generic name in 1759 and 1773.

1773: *Vena* Gallandat, 1773a. Type *Vena medinensis*.

1792: *Nervus* Laporte. Type *medinensis*.

[Not *Dracunculus* Wieg., 1834, reptile.]

dracunculus Bremser, 1819a, 194-221, pl. 4, fig. 1. For *medinensis* Linnæus, 1758a. 1819: *Filaria*.

duodenale Dubini, 1843a, 5-13, pl. 1, figs. 1-5; pl. 2, figs. 1-3.

1843: *Agchylostoma* (type). 1845: *Ancylostoma* (type). 1846: *Anchylostoma* (type). 1851: *Anchylostomum* (type). 1851: *Ancylostomum* (type). 1877: *Anhylostoma* (type). 1879: *Anchilostoma* (type). 1885: *Uncinaria*. [1886: *Ankylostoma* (type).] 1895: *Ankylostomum* (type). 1897: *Anchylostamum* (type).

dussumierii van Beneden, 1870a, 362-363; "*simplex* Rudolphi, 1809," of Dujardin, 1845a, 220-221, renamed.

[1845: *Ascaris* (*Anisakis* [type]).]

- Dyacanthos* Stiebel, 1817, 174-179. *D. polycephalus* Stiebel, 1817, 174-179, pl. 3, figs. 2-5, only species, hence type. A spurious parasite.
 [Not *Diacanthus* Siebold, 1817, worm; Latreille, 1834, coleopteron; *Diacantha* Swainson, 1839, fish; Chevr., 1834, coleopteron.]
- Ditrachyceros* Hermann in Sultz, 1801, 9. Corrected to *Ditrachyceros* Hermann in Sultz, 1801, 42. Mentions no specific name.
- eberthi* Bastian, 1865c, 141, pl. 11, figs. 143-145.
 1865: *Anticoma* (type).
- echinatus* Rudolphi, 1809a, 98-100. Includes *spirillum* Pallas, 1781, 111, and *lacertæ* Schrank, 1788, 5.
 1809: *Trichocephalus*. [1819: *Sclerotrichum* (type).] 1845: *Sclerotrichum* (type).
- Echinocephalus* Molin, 1858, 154. *E. uncinatus*, only valid species, hence type; also type by virtual tautonymy and page precedence.
 [Not *Echinocephalus* E. Schneider, 1875, protozoon.]
uncinatus Molin, 1858, 154.
cygni Molin, 1858, 154; species inquirenda.
- echinodiscus* Diesing, 1851a, 36, 554.
 1851: *Echinorhynchus*. 1892: *Gigantorhynchus* (type).
- echinodon* Marion, 1870, 26, pl. H, fig. 1.
 1870: *Thoracostoma* (? type).
- Echinonema* von Linstow, 1898, 20. Oct., 672. *Hoplocephalus cinctus* von Linstow, 1898, 469, only species, hence type. *Hoplocephalus* von Linstow, 1898 (not Cuvier, 1829, reptile), renamed.
- Echinorhynchus* Nordmann, 1840, 641. *Echinorhynchus* renamed.
- Echinorhynchus* Zoega in Mueller, 1776, xxviii, 214-215. Type species? *E. gadi* or ? *E. lævis*.
 1779: *Echinoryngus*. [Not accessible to us.]
 1839: *Echinorhynchus* Creplin, 1839a, 283. For *Echinorhynchus*.
 1840: *Echinorhynchus* Nordmann, 1840, 641. For *Echinorhynchus*.
 [?]: *Echinorhynchus*, *Echinoryngus*, *Echinoryncus*, *Echinoryngus*.
lacustris Mueller, 1776, 214. To *Cucullanus* by Mueller, 1779, 100.
gadi Mueller, 1776, 214. Renamed *E. lineolatus* by Mueller, 1779, 96-98.
candidus Mueller, 1776, 214. [Renamed *Echinorhynchus acus* Rudolphi, 1802, 51; = *Proboscidea versipellis*.]
lævis Mueller, 1776, 215. [Probably includes *Echinorhynchus tereticollis* and *E. nodulosus*.]
- Echinorhynchus* Creplin, 1839a, 283; = *Echinorhynchus* renamed.
- Echinoryngus* [?], 1779, 543. [Not accessible to us.]
- echiurus* Diesing, 1853a, 34.
 1853: *Mastophorus* (probably type).
- Elaphocephalus* Molin, 1860, 343-344. *E. octocornutus* Molin, 1860, 344, only species, hence type.
 [Not *Elaphocephalus* Macleay, 1878, reptile. See Zool. Rec. (1878) 1880, v. 15 Rept., 12.]
- elegans* Zeder, 1800a, 91.
 1800: *Cucullanus* (type by Dujardin, 1845a, 245; see, however, *Cucullanus*).
elegans Bastian, 1865c, 165-166, pl. 13, figs. 221-222.
 1865: *Spilophora* (type). 1865: *Spiliphora* (type).
- elegans* de Man, 1888, 16-17, pl. 1, fig. 9.
 1888: *Aræolaimus*.
- elongata* Rudolphi, 1819a, 26, 246.
 [1811: *Acuaria*.] 1819: *Spiroptera*.

elongata Buetschli, 1874b, 270-271, pl. 4, figs. 18, a-d.

1874: *Ocystoma* (type).

elongatum Bastian, 1865c, 145, pl. 12, figs. 156-157.

1865: *Leptosomatum* (type).

elongatus Dujardin, 1845a, 234.

1845: *Enoplus*. [1851: sub *Amblyura gordius*?]

elongatus Bastian, 1865c, 155, pl. 12, figs. 180-181.

1865: *Linhomæus*.

emeryi Camerano, 1895a, Aug., 6-7.

1895: *Gordius*. 1897: *Paragordius*.

Enchelidium Ehrenberg, 1836, 40-41, 57. *E. marinum* (Mueller, 1783) Ehrenberg,

1836, 40-41, 57, only species, hence type; = *Vibrio marinus* Mueller.

1845: *Enchilidium* Dujardin, 1845a, 238; for *Enchelidium*.

1867: *Enchilidium* Leuckart, 1867, 31. Probably misprint.

1884: *Enchelydium*, see Scudder, 1884, 111.

Enchelydium, see *Enchelidium*.

Enchilidium, see *Enchelidium*.

Enoploplatinus de Man, 1893, 118-122. *E. vulgaris* de Man, 1893, 119-122, pl. 7, fig.

13, only species, hence type.

Enoplostoma Marion, 1870, 22-25. Type species probably *E. hirtum*.

hirtum Marion, 1870, 22-23, pl. F, figs. 1-1x. ♂ ♀ [Very common.]

minus Marion, 1870, 23-24, pl. G, figs. 1-1h. ♂

brevicaudatum Marion, 1870, 24-25, pl. G, figs. 2-2c. ♀

Enoplus Dujardin, 1845a, 230, 233-235, 653. Type species probably *E. tridentatus* Dujardin, 1845a, 233-234.

[Not *Enoplus* Reiche, 1859, coleopteron; *Enoplus* Agassiz, 1846, for *Enoplosus* Lacép., 1802, fish; *Anoplus* Schœnh., 1826, coleopteron; Gray, 1840, reptile; Schl., 1842, fish.]

1845: *Tricontus* Dujardin, 1845a, 3, 653.

tridentatus Dujardin, 1845a, 233-234. ♂ ♀ (? Type.)

stenodon Dujardin, 1845a, 234. Sex?

elongatus Dujardin, 1845a, 234. Sex? [Sp. inq. according to Diesing, 1851a, 125; to *Amblyura* as doubtful by Diesing, 1851a, 127.]

microstomus Dujardin, 1845a, 234-235. Sexes?

rivalis Dujardin, 1845a, 235. ♀ [To *Plectus* by Bastian, 1865c, 121.]

crassiusculus Dujardin, 1845a, 235, as doubtful. ♀ [To *Mononchus* by Bastian, 1865c, 103.]

Unless other considerations call for some other species as type, it will be best to take *E. tridentatus* as such. See *Tricontus*.

entomelas Dujardin, 1845a, 262-263, pl. 4, fig. C.

1845: *Angiostoma*.

Epithelphusa Drago, "1887a," 1887b, 81-83. *E. catanensis* Drago, 1887b, 81-83, only species, hence type. Parasitic oligochete.

equi Schrank, 1788, 4.

1788: *Trichocephalus*. [1803: *Oxyuris curvula* (type).]

equinus Mueller, 1780 or 1784, 6. [Sherborn gives 1784, 6.]

1780 or 1784: *Strongylus* (type). [1809: *Sclerostoma* (type).] [1845: *Sclerostomum* (type).]

erecta Molin, 1860, 927-928.

1860: *Spiroptera*. 1861: *Cheilospirura*.

esuriens Dujardin, 1845a, 270.

1845: *Dacnitis* (? type, see also *sphærocephala*).

Ethmolaimus de Man, 1880, 21-22. *E. pratensis* de Man, 1880, 22, only species, hence type.

- Etholaimus*. We have been unable to trace this word. Possibly it is a misprint for *Ethmolaimus*.
- Eubostrichus* Greef, 1869a, 117-118. Type species ? *E. filiformis*.
filiformis Greef, 1869a, 117-118, pl. 7, figs. 1-4. ♀
phalacrus Greef, 1869a, 118, pl. 7, figs. 5-6. ♂
- Eucamptus* Dujardin, 1845a, 106-107. *E. obtusus* Dujardin, 1845a, 107, only species, hence type.
 [Not *Eucamptus* Chevr., 1833, coleopteron; Dej., 1833, coleopteron.]
- Euchelidium* Leuckart, 1867, 31; probably misprint for *Enchelidium*.
- Euchromadora* de Man, 1886, 66, 67-76. *E. vulgaris* (Bastian, 1865) de Man, 1886, 69-76, pls. 12-13, only positive species, hence type. (See also *Chromadora*); also type by original designation.
- Eucolus* Dujardin, 1845a, 3, 23-25. Type species probably *E. xerophilum*.
 [Not *Eucolus* Muls., 1853, coleopteron.]
xerophilum (Creplin, 1839) Dujardin, 1845a, 24. ♂ ♀ (Description more complete.)
tenuis Dujardin, 1845a, 24-25. ♂ ♀ (Description less complete.)
- Eucyathostomum* Molin, 1861, 435, 455-463. Type species by present designation *E. longesubulatum*.
dentatum Molin, 1861, 459-460, pl. 1, fig. 7. ♂ ♀
longesubulatum Molin, 1861, 460-462, pl. 2, figs. 1-2. ♂ ♀ (Type.)
copulatum Molin, 1861, 462-463. ♂ ♀
 Molin examined all three forms, and figured the first and second. He definitely states that his anatomical description is based upon *E. longesubulatum*, from *Cervus campestris* and *C. rufus*, on which account we designate this species as type. The designation of *E. dentatum* as type would be more likely to lead to confusion.
- euryoptera* Rudolphi, 1819a, 26-27, 248-249. Including *Ascaris collurionis* Frélich.
 [1811: *Acuaria*.] 1819: *Spiroptera*.
- Eurystoma* Marion, 1870, 19-21. Type species *E. spectabile*.
 [Not *Eurystoma* Rafinesque, 1818, mollusk; not *Eurystoma* Alb., 1850, mollusk; not *Eurystoma* Kell., 1853, coleopteron; not *Eurysoma* Gistel., 1829, coleopteron; not *Eurysoma* Koch, 1840, arachnoid; not *Eurysomus* Young, 1866, fish.]
spectabile Marion, 1870, 20-21, pl. E, figs. 1-1b. ♂ ♀ (Type.)
tenuis Marion, 1870, 21, pl. E, figs. 2-2b. ♂
- As the generic name *Eurystoma* Marion falls under the rule of homonyms, it is immaterial which species is designated as type, except as such designation may possibly affect later established nontypical genera; we here designate *spectabile* because both sexes were described, and on account of page precedence.
- Eustrongylus* Diesing, 1851a, 82, 325-328. Includes *Diectophyme*, 1802; hence type species *Eustrongylus gigas* = *Diectophyme renale*.
- exigua* Gœldi, ? "1887"; 1889a, 28. Feb., 266; 1892a, 68.
 ? 1887: *Meloidogyne*. 1889: *Meloidogyne* (type).
- exilis* Dujardin, 1845a, 29-30.
 1845: *Liniscus* (type).
- exilis* Marion, 1870, 11-12, pl. A, fig. 1.
 1870: *Lasiomitus* (type).
- fulconis* Gmelin, 1790a, 3040. See under *Filaria*.
 1790: *Filaria* ~~exilis~~
- farionis* Fischer, 1798a, 304-309, fig. 7; 1798b, 98; 1799a, 95-100, pl. 2, figs. 1-6.
 1798: *Cystidicola* (type). [1801: *Ophiostoma* (type).] [1801: *Fissula* (type).]
 1845: *Disparagus*.

fasciculatus Cobb, 1894c, Apr. 13, 411-413, figs. 10, i-vi.

1894: *Synonchus* (type).

Fictitium Diesing, 1851a, 353. *F. cephalopodum* Diesing, 1851a, 353, only species, hence type. Doubtful whether this is a generic name.

figuratum Bastian, 1865c, 146-147, pl. 12, figs. 161-163.

1865: *Leptosomatum*.

Filaria Rudolphi, 1809a, 69. Misprint for *Filaria*.

Filaria Mueller, 1787, 64-67. Type species by elimination *F. martis*.

In the original reference Mueller (1787) does not give any specific names in connection with this genus, but he gives a number of bibliographic references arranged under their respective hosts. The species in question, so far as they can be determined by a comparison of Mueller, 1787, and Gmelin, 1790a, are as follows:

A. In Mammals:

leonis Gmelin, 1790a, 3040. [Sp. inq., in Rudolphi, 1809a, 68; Diesing, 1851a, 280; Molin, 1858, 421; Stossich, 1897, 71.]

leporis Gmelin, 1790a, 3040. [Sp. inq., in Rudolphi, 1809a, 69; Diesing, 1851a, 280; Molin, 1858, 421; Stossich, 1897, 72.]

martis Gmelin, 1790a, 3040. [Renamed "*Filaria*" *mustelarum* Rudolphi, 1809a, 69; *Filaria mustelarum subcutanea* Rudolphi, 1819a, 7, 216; *F. quadrispina* Diesing, 1851a, 271-272; see also *F. perforans*, Molin, 1858, 387; see also Stossich, 1897, 32.]

B. In Birds:

gallinae Gmelin, 1790a, 3040. [See *Capillaria semiteres* Zeder, 1803a, 61; *Hamularia nodulosa* Rudolphi, 1809a, 84; *Trichosoma longicolle* Rudolphi, 1819a, 14, 221.]

falconis Gmelin, 1790a, 3040. [Renamed *Filaria falconum* Rudolphi, 1809a, 70, sp. dub.; see also *F. foveolatu* Molin, 1858, 375; see also *F. nodispina* Molin, 1858, 402.]

ciconiae Gmelin, 1790a, 3040. [See *Dicheilonema labiatum*.]

C. In Insects: [Probably all Gordiidae or Mermithidae.]

scarabaei Gmelin, 1790a, 3040.

carabi Gmelin, 1790a, 3040.

silphae Gmelin, 1790a, 3040.

grylli Gmelin, 1790a, 3040.

monoculi Gmelin, 1790a, 3041.

lepidopterorum Gmelin, 1790a, 3041.

tenthredinis Gmelin, 1790a, 3041.

phryganæ Gmelin, 1790a, 3041.

Lamarck (1801, 340) mentions only 1 species, namely, *Filaria equi* Mueller, but this can not be taken as designation of type, since Mueller did not include it in his original (1787) species. Since Mueller distinctly intended to separate *Filaria* from *Gordius*, and since all the forms he mentions for insects probably belong to the Gordiidae or Mermithidae, and some of them have already been eliminated from *Filaria*, it will be best not to consider the insect parasites in determining the type of *Filaria*; such a procedure of exclusion is further justified by the tendency since Mueller's time to look upon *Filaria* as a genus parasitic in warm-blooded animals; it also agrees with the principle of page precedence.

In considering the 6 remaining species (3 from mammals and 3 from birds), it may be noted that *F. gallinae* and *F. ciconiae* have already been eliminated; further, *F. leonis* and *F. leporis* are viewed as doubtful species, hence these may next be eliminated from consideration. There now remain *F. martis* and *F. falconis*. Of these two, conditions clearly favor the selection of *F. martis* (see *F. quadrispina* Diesing).

filaria Dujardin, 1845a, 108, pl. 3, fig. H.

1845: *Dicelis* (type).

filaria van Beneden, 1873b, 21, pl. 5, figs. 1-5.

1873: *Litosoma* (type).

Filarina Hammerschmidt, 1838a, 351, 358. *F. vitrea* Hammerschmidt, 1838a, 358, pl. 4, figs. a-b, only species, hence type.

Filaroides van Beneden, ["1858a, 267-269"]; 1861a, 267-269. *F. mustelarum*, only species, hence type.

Filiaris J. de méd. vét., Par., 1826, v. 3, 167, 168; for *Filaria*.

filiforme Molin, 1857, 220-222, figs. 7-9.

1857: *Gongylonema*.

filiformis Bastian, 1865c, 98, pl. 9, figs. 7-8.

1865: *Monhystera*.

filiformis Bastian, 1865c, 169, pl. 13, figs. 242-244.

1865: *Chromadora*.

filiformis Greef, 1869a, 117-118, pl. 7, figs. 1-4.

1869: *Eubostrichus* (? type).

filiformis de Man, 1889, 3-4.

1889: *Axonolaimus*.

Filocapsularia Deslongchamps, 1824q, 398-400. *F. communis* Deslongchamps, 1824q, 399-400, only species, hence type; which includes a number of previously named species.

Filoria Nordmann, 1832, 11. Misprint for *Filaria*.

filum Dujardin, 1845a, 135 [includes *major* Raspail, 1829].

1845: *Pseudalius* (type).

Fimbria Cobb, 1894c, Apr. 13, 420-421. *F. tenuis* Cobb, 1894c, 420-421, figs. 14, i-iv, only species, hence type. See *Fimbrilla*.

[Not *Fimbria* Bohadsch, 1761, mollusk; Meg., 1811, mollusk; Risso, 1826, mollusk; Belon, 1896, insect; *Fimbriaria* Frœlich, 1795, cestode.]

Fimbrilla Cobb, 1905, in Stiles & Hassall, 1905, p. 107. New name for *Fimbria* Cobb, 1894c [not Bohadsch, 1761, etc.]; hence type species *Fimbrilla tenuis* (Cobb, 1894) Cobb, 1905, 107.

Fissula Lamarck, 1801, 339. Type by inclusion *Cystidicola farionis* Fischer, 1798. See *Cystidicola*.

intestinalis (Bloch, 1782) Lamarck, 1801 [= *Gordius intestinalis* Bloch].

cystidicola Lamarck, 1801 [= *Cystidicola farionis* Fischer, 1798 (type of *Cystidicola*) renamed].

Lamarck (1816, Aug., 210) says: "Je crois être le premier qui ait senti la nécessité de séparer des ascarides, le ver que Muller a nommé *Ascaris bifida*. J'en ai formé un genre particulier dans mes leçons, sous le nom de fissule. Ce genre fut ensuite reconnu, mais diversement nommé par les auteurs. En effet, quelque années après, M. Fischer l'établit sous la dénomination de *Cystidicola*, d'après une nouvelle espèce qu'il fit connaître; enfin, le docteur Rudolphi, reconnaissant aussi le même genre, lui assigna le nom d'*Ophios-toma*."

We have been unable to find *Fissula* prior to Lamarck, 1801, and in this publication Lamarck does not mention *Ascaris bifida*, which he refers to in 1816, 211, as synonym of *Fissula phocæ*. In 1816, he does not mention *F. intestinalis*. From these data it is not clear to us how *A. bifida* can be accepted as type of *Fissula*, 1801.

Our view in taking *farionis* as type of *Ophiosstoma*, thus making *Cystidicola*, *Fissula*, and *Ophiosstoma* synonymous, is in harmony with the synonymy of Blainville, 1824a, 518.

fexilis Dujardin, 1845a, 109, pl. 6, fig. A.

[1845: *Leptoderes* (type).] 1845: *Leptodera* (type).

fluvialis Mueller, 1783, 161; = "*fluviatilis* Mueller, 1786, 65."

1783: *Vibrio*. [1786: *Anguillula*.] Type of *Anguillula*, 1838 not 1786.

fluviatilis "Mueller, 1783, 65;" Mueller, 1786, 65. See *fluvialis*.

1783: *Anguillula* Mueller. 1828: *Anguillula* Hemprich and Ehrenberg (type.)
fovearum Dujardin, 1845a, 236-237.

1845: *Oncholaimus* (? type, see also *muscorum* and *attenuatus*). 1865: *Mononchus*.
foveolatus Rudolphi, 1809a, 109-111, pl. 3, fig. 2; in part, includes *marinus* Mueller.

1809: *Cucullanus*. [? 1845: *Dacnitis hians* sub.]

fragile Magalhães, 1905, Jan. 15, 314-318, figs. 4, 1-4.

1905: *Synæcnema* (type).

fülleborni Linstow, 1901, Apr. 20, 418-419, figs. A-E.

1901: *Spinifer* (type).

fungorum Linnæus, 1767, 1326.

1767: *Chaos*.

funiculus Deslongchamps, 1824e, 89.

1824: *Ascaris*. [1845: *Ascaris (Ascaridia) inflexa* (sub).]

Furia Linnæus, 1758a, 644, 647. *F. infernalis* Linnæus, 1758a, 647, only species, hence type.

[Not *Furia* Cuvier, 1828, mammal.]

Although *Furia*, 1758, is no longer looked upon as a valid genus of worms, the name must be recognized as still belonging in zoological nomenclature, and its use by Linnæus, 1758, invalidates its adoption for any other genus or alleged genus.

Fusoria Zeder, 1800a, 6, 16-68. *Ascaris* Linnæus, 1758a, renamed; hence type species *Ascaris lumbricoides*.

Of the two original species of *Ascaris*, Zeder in 1800 mentioned only *Fusaria lumbricoides*, but in 1803 he also mentioned *Fusaria vermicularis*. He distinctly gives *Fusaria* as *Ascaris* renamed; hence, *Fusaria* is a synonym of *Ascaris* and takes the same species as type.

fusca Rudolphi, 1819a, 5, 211.

1819: *Filaria*. 1861: *Ichthyonema*.

fusiformis Molin, 1858, 415.

1858: *Filaria*. 1861: *Dicheilonema*.

fusiformis Bastian, 1865c, 121, pl. 10, figs. 95, 96.

1865: *Plectus*.

gadi Mueller, 1776, 214. Renamed *lineolatus* Mueller, 1779, 96-98.

1776: *Echinorhynchus* (? type).

galeatus Rudolphi, 1819a, 648-649; = *strongyloides* Diesing, 1851a.

1819: *Strongylus*. 1845: *Sclerostoma*. [1851: sub *Diaphanocephalus strongyloides* (? type).]

gemmatus Villot, 1884. [Not accessible to us.]

1884: *Gordius*. 1897: *Parachordodes*.

gibbosa Rudolphi, 1809a, 167-168. Includes *Fusaria strumosa* Zeder, 1800a.

1809: *Ascaris*. 1845: *Ascaris (Ascaridia)*.

gibbosum Leuckart, 1886, 743-746.

1886: *Asconema* (type). 1887: *Atractonema* (type).

gibbosus Rudolphi, 1819a, 639.

1819: *Trichocephalus*. [1851: *Oncophora* (type).]

Gigantorhynchus Hamann, 1892d, 196. Type species *G. echinodiscus* (Diesing, 1851) Hamann, 1892d, 196. Designated by Hamann in letter to Stiles, dated Nov. 29, 1903.

echinodiscus (Diesing, 1851) Hamann, 1892d, 196.

Gigantorhynchus Hamann—Continued.

tænioides (Diesing, 1851) Hamann, 1892d, 196.

spira (Diesing, 1851) Hamann, 1892d, 196.

gigas (Bloch, 1782) Hamann, 1892d, 196, as probable member of this genus. ♂ ♀

gigas Bloch, 1782a, 26–27, pl. 7, figs. 1–8. [Bloch appeared prior to Goeze.]

1782: *Echinorhynchus*. 1892: *Gigantorhynchus*.

gigas Rudolphi, 1802, 2, 42, pl. 1, fig. 2. [Not accessible to us.]

1802: *Strongylus*. [1802: *Dioctophyme* (type).] 1851: *Eustrongylus* (type).

glaber Bastian, 1865c, 136, pl. 11, figs. 129–130.

1865: *Oncholaimus*. 1890: *Oncholaimus* (*Viscosia*).

globiceps Rudolphi, 1819a, 7, 215.

1819: *Filaria*. 1861: *Ichthyonema* (probably type).

globiceps de Man, 1880, 15–16.

1880: *Microlaimus* (type).

globicola Fabricius, 1780a, 268.

1780: *Gordius*. ? 1790: *Ascaris*. [1801: *Ophiostoma*.] 1803: *Fusaria*. 1803:

Ophiostoma. Eliminated from *Ophiostoma* by Rudolphi, 1810a, 279.

globocaudatus Diesing, 1853a, 34.

1853: *Mastophorus*.

Globocephalus Molin, 1861, 436, 534–537. *G. longemucronatus* Molin, 1861, 536–537, pl. 6, figs. 3–4, only species, hence type. See also *Characostomum*.

[Not *Globicephalus* Lesson, 1828, mammal, renamed *Globiocephalus* Gray, 1843, *Globicephalus* van Beneden, 1880, *Globiceps* Flower, 1883 (not Lepelletier and Serville).]

1895: *Cystocephalus* Railliet, 1895, 1302. *Globocephalus* Molin renamed.

1902: *Characostomum* Railliet, 1902, 109. *Globocephalus* Molin renamed.

globosus Zeder, 1800a, 94–96; Rudolphi, 1809a, 111.

1800: *Cucullanus*.

globosus Dujardin, 1845a, 269. [See also *Cucullanus globosus* Zeder, 1800a, 94.]

1845: *Dacnitis*.

glomerans Bastian, 1865c, 115–116, pl. 9, figs. 16–17.

1865: *Tripyla* (type).

glutinis Mueller, 1783, 161; [= *anguillula* 1773 = *redivivum* 1767]. See *Anguillula*.

[1773: *Vibrio anguillula*.] 1783: *Vibrio*. 1786: *Anguillula* (type). 1815:

Gordius. [1838: *Anguillula*.] 1845: *Rhabditis*.

glycirrhiza van Beneden, 1873b, 13–16, pl. 1, figs. 1–7.

1873: *Strongylacantha* (type).

Gnathostoma Owen, 1836, 123–126. *G. spinigerum* Owen, 1836, 123–126, only species, hence type. See also *Cheiracanthus*.

Gæzia Zeder, 1800a, 6, 96–102. Type by elimination *G. armata* Rudolphi, 1801, 57; = *Cucullanus ascaroides*.

[Not *Gæzia* Boeck, 1871, crustacean; not *Gætia* Karsch, 1892, insect.]

Cucullanus ascaroides Goeze, 1782a, 40, 134; = *Gæzia armata* Rudolphi, 1801, 57.

inermis Zeder, 1800a, 101–102; sub *Liorhynchus* by Rudolphi, 1801.

Gongylonema Molin, 1857, 148–152, 216–223. Type species *G. minimum*, designated by Molin, 1857, 150.

minimum Molin, 1857, 218–220, figs. 1–6. ♂ ♀ Host *Mus musculus* (type).

filiforme Molin, 1857, 220–222, figs. 7–9. ♀

spirale Molin, 1857, 222, figs. 10–12. ♂

pulchrum Molin, 1857, 223, figs. 13–15. ♀

Gordius Linnæus, 1758a, 644, 647. Type species *G. aquaticus*.

aquaticus Linnæus, 1758a, 647. (Type by Linnæan rule, see p. 64.)

argillaceus Linnæus, 1758a, 647.

medinensis Linnæus, 1758a, 647. To *Dracunculus* as type, 1759 and 1773.

gordius "Mueller, 1786, 60."

1786: *Vibrio*. 1828: *Amblyura*.

gracile Leidy, 1856, 52-53.

1856: *Spirooura* (? type). 1861: *Spirura* (? type).

gracile Bastian, 1865c, 145-146, pl. 12, figs. 158-160.

1865: *Leptosomatum*.

gracilescens Rudolphi, 1809a, 248-249.

1809: *Liorhynchus*.

gracilis Diesing, 1838a, 189, nomen nudum; 1839a, 225, pl. 14, figs. 8-11.

1838: *Cheiracanthus*. 1839: *Cheiracanthus*.

gracilis Leuckart, 1842, 38-39, pl. 1, figs. 11, a-c.

1842: *Strongylus*. 1861: *Metastrongylus*.

gracilis Diesing, 1851a, 231. Includes *Spiroptera bicuspis* Rudolphi, 1819a.

[1845: *Dispharagus bicuspis*.] 1851: *Histiocephalus*.

gracilis Eberth, 1863a, 34, pl. 2, figs. 13-19.

1863: *Enoplus*. 1865: *Cyatholaimus*.

gracilis Bastian, 1865c, 99, pl. 9, figs. 20-22.

1865: *Trilobus* (type).

gracilis von Linstow, 1876, 16-17, pl. 2, fig. 38.

1876: *Diplolaimus* (type).

gracilis de Man, 1876, 172-174, pl. 11, figs. 43, a-c.

1876: *Bastiania* (type).

gracilis de Man, 1888, 3-4, pl. 1, fig. 1.

1888: *Halalaimus* (type).

granulosus Bastian, 1865c, 120-121, pl. 10, figs. 93-94.

1865: *Plectus*.

Graphonema Cobb, 1898d, Dec. 9, 406-407. *G. vulgaris* Cobb, 1898d, 406-407, only species, hence type.

gulosa Rudolphi, 1819a, 40, 271-272.

1819: *Ascaris*. 1866: *Labiduris* (type).

Gyalcephalus Looss, 1900, Feb. 12, 191-192. *G. capitatus* Looss, 1900, 191-192, only species, hence type.

Gymnotoma Schneider, 1866, 326. Ordinal name for *Rhamphogordius*. See also *Polygordius*.

Habronema Diesing, 1861c, 273-274. *H. muscae* (Carter, 1861) Diesing, 1861c, 274, only species, hence type.

Hæmatozoon Leisering, 1865, 125. Used in a collective rather than a generic sense, for *H. subulatum* Leisering, 1865, 117-125, pl. 2, figs. 1-4; nematode found in the blood.

hæmisphæricus von Linstow, 1877, 2.

1877: *Mitrephorus* (type).

Hæmonchus Cobb, 1898a, Apr. 8, 447. *H. contortus* (Rudolphi, 1803) Cobb, 1898a, 447, figs. 120, i-v, only species, hence type.

Hæruca Gmelin, 1790a, 3050. *H. muris* Gmelin, 1790a, only species, hence type; (= ? *Cysticercus fasciolaris*).

[Cuvier, 1798, 637. No species mentioned.]

1840: *Hæruca* Nordmann, 1840, 641. For *Hæruca*.

Hærucula Pallas, "1760, 52;" 1768, 289. No specific name; gives "habitat in ranæ, esocis, cernuæ, percæ, & maxime in Truttæ nobilis intestino." See also *Tæniola*.

1760: *Tæniola*. "1768: *Tæniola*."

Halalaimus de Man, 1888, 2-4. *H. gracilis* de Man, 1888, 3-4, pl. 1, fig. 1, only species, hence type.

- halecis* Gmelin, 1790a, 3037. Includes *Gordius harangum* Bloch, 1782a, 33.
1790: *Ascaris*. 1800: *Capsularia*. [1802: to *Filaria* by Rudolphi, 1802.]
[?]: *Cucullanus*.
- Halichoanolaimus* de Man, 1886, 66; 1888, 36–39. *Spilophora robusta* Bastian, 1865c, 166, pl. 13, figs. 226–227, only species, hence type.
- Hamularia* Treutler, 1793, 10–13. *H. lymphatica* Treutler, 1793, 10–13, pl. 2, figs. 3–7, only species, hence type.
1800: *Tentacularia* Zeder, 1800a, 5. *Hamularia* renamed.
- hamulosa* Diesing, 1851a, 217.
1851: *Spiroptera*. 1861: *Cheilospirura* (type). 1890: *Dispharagus*.
- Hedruis* Schneider, 1866, 340. Misprint for *Hedruris*.
- Hedruris* Nitzsch, 1821, 48–49. [*H. androphora* (Schmalz)?] *Ascaris androphora* Nitzsch, 1821, 48–49, only species, hence type.
1866: *Hedruis* Schneider, 1866, 340. Misprint.
- Helicotherix* Osman Galeb, 1878b, 296–298. (Subgenus of *Oxyuris*.) Type by inclusion
Oxyuris spirotheca.
Oxyuris spirotheca Györy, 1856, 327–332, figs. 1–15. Type of *Pseudonymus* Diesing, 1857a.
Oxyuris hydrophili Osman Galeb, 1878b, 297, pl. 20, fig. 10.
Oxyuris hydroi Osman Galeb, 1878b, 297, pl. 25, fig. 1.
Oxyuris hydrobii Osman Galeb, 1878b, 297–298.
- Heligmus* Dujardin, 1845a, 136, 147–148. *H. longicirrus* Dujardin, 1845a, only species, hence type.
[Not *Eligma* Huebn., 1816, lepidopteron; corrected to *Heligma* by ? [see Scudder, 1884, 143]; *Heligmus* Cand., 1864, coleopteron.]
- Helmins* Schlotthauber, 1860, 128. Nomen nudum except for habitat. It is doubtful whether this should be interpreted as a generic name.
nematoïdeus paradoxus.
nematoïdeus dubius.
- hemignathi* Shipley, 1896, 207–218, pl. 12, figs. 1–15.
1896: *Arhynchus* (type). 1899: *Apororhynchus* (type).
- Hemipilus* Quatrefages, 1846, 131–132. One unnamed species. Bastian, 1865c, 172, gives three species.
- hermaphrodita* Frölich, 1789a, 151–155, pl. 4, figs. 11–13.
1789: *Ascaris*. [1845: *Ascaris* (*Ascaridia*) *truncata*.]
Heruca Scopoli, “1777, 383.” [Not accessible to us.] See also *Haruca*.
- Heteracis* Molin, 1858, 149–150. *Heterakis* Dujardin, 1845a, renamed. Type species *Heterakis vesicularis*.
- Heterakis* Dujardin, 1845a, 136, 222–230. Type by original designation (Dujardin, 1845a, 222) *H. vesicularis*. (Includes *Ascaris papillosa* Bloch, 1782a; *Ascaris teres* (minor) Goeze, 1782a.)
1858: *Heteracis* Molin, 1858, 149–150. *Heterakis* renamed.
- Heterobolbus* Railliet, 1896, 161; = *Heterodera* Schmidt, 1871, renamed on account of *Heteroderes* Latreille, 1834. Hence type species same as *Heterodera*.
- Heterocephalus* Marion, 1870, 18–19. *H. laticollis* Marion, 1870, 18–19, pl. D, only species, hence type.
[Not *Heterocephalus* Rueppel, 1842, mammal.]
- Heterocheila*. See *Heterochella* under *Heterocheilus*.
- Heterocheilus* Diesing, 1839a, 229–232. *H. tunicatus* Diesing, 1839a, 230–232, pl. 15, figs. 1–8, only species, hence type; = *Lobocephalus heterolobus* Diesing, 1838a, 189, renamed. Also type by virtual tautonymy.
[Not *Heterocheila* Rond., 1857, dipteron; *Heterocheila* for *Heterochella* Lioy., 1864, dipteron; *Heterochelus* Burmeister, 1844, coleopteron; *Heterochilus* for *Heterocheila*.]

heterochrous Rudolphi, 1802, 36-38.

1802: *Cucullanus*. [?1845: *Dacnitis esuriens* sub.]

Heterodera Schmidt, 1871. [Not accessible to us.]

[Not *Heteroderes* Latreille, 1834.]

1896: *Heterobolbus* Railliet, 1896, 161. *Heterodera* renamed.

heterolobus Diesing, 1838a, 189.

1838: *Lobocephalus* (type). [1839: *Heterocheilus* (type).]

Heth Cobb, 1898a, Mar., 299, figs. 10, i-iv. *H. juli* Cobb, 1898a, 299, figs. 10, i-iv, only species, hence type.

hians Dujardin, 1845a, 270-271.

1845: *Dacnitis*.

hirsutus Bastian, 1865c, 154-155, pl. 12, figs. 178-179.

1865: *Linhomæus* (type). 1865: *Linhomomius* (type).

hirsutus Bastian, 1865c, 157-158, pl. 13, figs. 192-194.

1865: *Sphærolaimus* (type).

hirsutus Cobb, 1894c, 413.

1894: *Synonchus*.

hirtum Marion, 1870, 22-23, pl. F.

1870: *Enoplostoma* (probably type).

Histiocephalus Molin, 1860, 913. Misprint for *Histiocephalus*.

Histiocephalus Diesing, 1851a, 80, 230-232. Type species? *H. laticaudatus*.

laticaudatus (Rudolphi, 1819) Diesing, 1851a, 230. ♂ ♀ Host *Otis tetrax*.

In *Dispharagus* by Dujardin, 1845a.

minutus (Rudolphi, 1819) Diesing, 1851a, 230. ♂ ♀ Host *Platessa flesus*.

In *Dispharagus* by Dujardin, 1845a.

gracilis Diesing, 1851a, 231. ♂ ♀ Includes *Spiroptera bicuspis* Rudolphi, 1819a, 24; in *Dispharagus bicuspis*, Dujardin, 1845a, 79. Host *Vanellus melanogaster*.

spiralis Diesing, 1851a, 231. ♂ ♀ [Includes *Spiroptera obvelata* Creplin.]

To *Cosmocephalus alatus* by Diesing, 1861a, 763.

brevicaudatus (Dujardin, 1845) Diesing, 1851a, 231-232. ♂ ♀ [= *Dispharagus brevicaudatus* Dujardin, 1845a, 80.] To *Dispharagus* as sp. inq. by Stossich, 1891, 98.

decorus (Dujardin, 1845) Diesing, 1851a, 232. ♂ ♀ In *Dispharagus decorus* Dujardin, 1845a, 78. Host *Alcedo ispida*.

denudatus (Dujardin, 1845) Diesing, 1851a, 232; sp. inq.; [= *Dispharagus denudatus* Dujardin, 1845a, 81].

Histiostrongylus Molin, 1861, 436, 530-534. *H. coronatus* Molin, 1861, 533-534, pl. 6, figs. 1-2, only species, hence type.

histris Cobb, 1898a, March, 315, fig. 37.

1898: *Xyo* (type).

Hæruca Nordmann, 1840, 641. For *Hæruca* Gmelin.

hominis Schrank, 1788, 4; = *Trichuris trichiura*.

1788: *Trichocephalus*. 1790: *Trichocephalus* (type). 1803: *Mastigodes* (type).

Hoplocephalus von Linstow, 1898, 469-470. *H. cinctus* von Linstow, 1898, 469-470, pl. 35, figs. 3-11, only species, hence type. [Name changed to *Echinonema* by von Linstow, 1898.]

[Not *Hoplocephalus* and *Oplocephalus* Cuvier, 1829, reptile; *Hoplocephali*, see *Cephaloplia*; *Hoplocephala* Macq., 1845, dipteran; *Heplacephala* Walk., 1857, dipteran; *Oplocephala* Lap., 1831, coleopteran; *Hoplocephala* (v. *Heplacephala*, *Oplocephala*).]

horrida Diesing, 1851a, 278. Includes *Filaria rhex* Owen.

1851: *Filaria*. 1861: *Dicheilonema*.

horridus von Linstow, 1876, 6, pl. 1, figs. 10-12.

1876: *Acanthophorus*.

hydrobi Osman Galeb, 1878b, 297-298.

1878: *Oxyuris* (*Helicotherix*).

hydroi Osman Galeb, 1878b, 297, pl. 25, fig. 1.

1878: *Oxyuris* (*Helicotherix*).

Hydromermis E. Corti, 1902a, 113. *H. rivicola* Corti, 1902a, 113, only species, hence type.

hydrophili Osman Galeb, 1878b, 297, pl. 20, fig. 10.

1878: *Oxyuris* (*Helicotherix*).

Hypodontolaimus de Man, 1886, 66; 1888, 39-44. Type species (designated by de Man, 1888, 39) *H. inaequalis* (Bastian, 1865).

Hystrichis Dujardin, 1845a, 290-291. *H. tricolor* Dujardin, 1845a, 290-291, only species, hence type.

Hystrignathus Leidy, 1850, 102. *H. rigidus* Leidy, 1850, 102, only species, hence type.

Ichthyonema Diesing, 1861a, 620, 698-699. Type species probably *I. globiceps*.

globiceps (Rudolphi, 1819) Diesing, 1861a, 699. ♂ ♀

fuscum (Rudolphi, 1819) Diesing, 1861a, 699. ♂

congeri vulgaris (Molin, 1859) Diesing, 1861a, 699; sp. inq.

ignavus Bastian, 1865c, 104, pl. 9, figs. 34, a-b.

1865: *Ironus* (type).

inaequalis Bastian, 1865c, 166, pl. 13, figs. 223-225.

1865: *Spiliphora*. [1865: *Spilophora*.] [1886: *Hypodontolaimus* (type).] 1888:

Hypodontolaimus (type).

inermis Zeder, 1800a, 101-102.

1800: *Gæzia*. [1801: *Liorhynchus*.] 1803: *Cochlus*.

inermis Molin, 1861, 540-542, pl. 7, figs. 1-3.

1861: *Kalicephalus* (probably type).

infernalis Linnæus, 1758a, 647.

1758: *Furia* (type).

inflexa Rudolphi, 1819a, 38, 268-269. [See also *Fusaria inflexa* Zeder, 1800a, 36-37.]

1819: *Ascaris*. 1845: *Ascaris* (*Ascaridia*).

inflexum Diesing, 1861a, 704; = *dipetala* Molin, 1858, 373, renamed.

1861: *Dipetalonema*.

inflexus Rudolphi, 1809a, 227-228. See also *filum*.

1809: *Strongylus*. 1845: *Stenurus* (type). 1851: *Prosthecosacter*.

infusorium Linnæus, 1767, 1326-1327.

1767: *Chaos*.

insignis Diesing, 1851a, 210.

1851: *Peritrachelius* (type).

instabilis Railliet, 1893, 442, fig. 301.

1893: *Strongylus*. 1905: *Trichostrongylus*.

intermedia Buetschli, 1873a, 67-68, pl. 6, figs. 33, a-b.

1873: *Monhystera*. 1880: *Prismatolaimus* (type).

intestinalis Bloch, 1782a, 33, pl. 10, figs. 8-9. [Not Fabricius, 1780a, 269.]

1782: *Gordius*. 1801: *Fissula*.

intestinalis Bavay, 1877a, 266-268.

1877: *Anguillula*. 1879: *Strongyloides* (type).

Ironus Bastian, 1865c, 93, 103-104. *I. ignavus* Bastian, 1865c, 104, pl. 9, figs. 34, a-b, only species, hence type.

[Not *Irona* Schiødte, 1883, crustacean (Zool. Rec. (1883), 1884, v. 20, Index, 7); not *Ironeus* H. W. Bates, 1872, coleopteron (Zool. Rec. (1872), 1874, v. 9, 301).]

irritans Rivolta, 1884, 128-134.

1884: *Dermofilaria* (type).

Isacis Diesing, 1861a, 614, 634. For *Isakis* Lespès, 1856.

Isacus Zool. Rec. (1896), 1897, v. 33, Verm., 42. For *Isacis*. See also *Isakis*.

Isakis Lespès, 1856, 335-336. *I. migrans* Lespès, 1856, 335-336, pl. 8, only species, hence type.

1861: *Isacis* Diesing, 1861a, 614, 634. For *Isakis*.

1897: *Isacus* Zool. Rec. (1896), 1897, v. 33, Verm., 42.

[Not *Isacis* and *Isacus* Cope, 1873, mammal; compare *Isaca* Walker, 1857, hemipteron.]

juli Cobb, 1898a, 299, figs. 10, i-iv.

1898: *Ileth* (type).

Kalicephalus Molin, 1861, 436, 538-549. Type species probably *K. inermis* Molin.

inermis Molin, 1861, 540-542, pl. 7, figs. 1-3. ♂ ♀

strumosus Molin, 1861, 542. ♂ ♀

subulatus Molin, 1861, 543-544. ♂ ♀

appendiculatus Molin, 1861, 544-547. ♂ ♀

mucronatus Molin, 1861, 547-548. ♂ ♀

brevipenis Molin, 1861, 548-549. ♂

bothropis Molin, 1861, 549. ♂ Sp. inq.

As *Kalicephalus inermis* is the only species figured by Molin, this should probably be selected as type.

kaschgaricus Camerano, 1897g, 395.

1897: *Parachordodes*.

Koleops Lockwood, 1872, Aug., 449-454. *K. anguilla* Lockwood, 1872, 449-454, figs.

120-122, only species, hence type. Written *Coleops* in Scudder, 1884, 74.

labiata Creplin, 1825a, 1-4.

1825: *Filaria*. 1861: *Dicheilonema* (? type).

Labiduris Schneider, 1866, 29, 122-123. *L. gulosa* (Rudolphi, 1819) Schneider, 1866,

123, pl. 7, figs. 15-17, only species, hence type; = *Ascaris gulosa* Rudolphi.

[Not *Labidura* Leach, 1817, orthopteron; *Labidura* Dum., 1806, orthoptera, supergeneric name.]

labiotruncata Molin, 1858, 412.

1858: *Filaria*. 1861: *Dicheilonema*.

Labyrinthostoma Cobb, 1898a, Apr., 421. Species apparently not named.

lucertæ Schrank, 1788, 5; = *spirillum* Pallas, 1781.

1788: *Trichocephalus*. 1803: *Mastigodes*. [1819: *Sclerotrichum (echinatum)*] type. [1845: *Sclerotrichum (echinatum)*] type. [1781: *Tænia spirillum* Pallas sub.]

lucteus Rathke, 1843, 238, pl. 12, fig. 16.

1843: *Ramphogordius* (type). 1866: *Ramphogordius* (misdetermined). 1868:

Polygordius (misdetermined by Schneider, type).

lacustris Mueller, 1776, 214.

1776: *Echinorhynchus*. 1779: *Cucullanus* (? type).

lævis Mueller, 1776, 215.

1776: *Echinorhynchus* (? type).

lævis Dujardin, 1845a, 117-118.

1845: *Strongylus*. 1861: *Metastrongylus*.

lævis Bastian, 1865c, 160, pl. 13, figs. 204-206.

1865: *Spira*.

lagopodis Frølich, 1802a, 46, pl. 1, fig. 21; pl. 2, figs. 1-3.

1802: *Ascaris*. [1845: *Ascaris (Ascaridia) compar* (sub).]

langrunensis de Man, 1890, 186-188, pl. 4, fig. 8.

1890: *Oncholaimus (Viscosia)*.

- Laphyctes* Dujardin, 1845a, 3, 653; = *Rictularia* Frölich renamed. Hence type species *Rictularia cristata*.
 [Not *Laphyctes* Reichenbach, 1850, bird; Stål, 1853, hemipteron; Færst., 1878, hymenopteron; *Laphyctis* Loew., 1859, dipteron.]
- lari* E. Blanchard, 1849a, March, 182-185, pl. 7, fig. 5.
 1849: *Cyathostoma* (type).
- Lasiomitus* Marion, 1870, 11-12. *L. exilis* Marion, 1870, 11-12, pl. A, fig. 1, only species, hence type.
- latastei* Camerano, 1895c, 8-9.
 1895: *Gordius*. 1897: *Parachordodes*.
- laticaudata* Rudolphi, 1819a, 24, 239-240.
 1819: *Spiroptera*. 1845: *Dispharagus*. 1851: *Histiocephalus* (? type).
- laticeps* Rudolphi, 1819a, 23, 238-239.
 1819: *Spiroptera*. 1845: *Dispharagus*.
- laticollis* Marion, 1870, 18-19, pl. D.
 1870: *Heterocephalus* (type).
- lavareti* Rudolphi, 1809a, 313. See *Acanthocephalus*.
 1809: *Echinorhynchus*.
- Laxus* Cobb, 1894c, Apr. 13, 413-416. Type species *L. longus*, designated by Cobb in letter to Stiles, dated Dec. 15, 1903.
contortus Cobb, 1894c, 414.
longus Cobb, 1894c, 415-416, figs. 11, i-v.
- Lecanocephalus* Diesing, 1839a, 227. *L. spinulosus*, only species, hence type.
 [Not *Lecanicephalum* Linton, 1891, cestode.]
- Leiuris* Leuckart, 1850, 11. *Strongylus leptocephalus* Rudolphi, 1819a, only species, hence type.
 [Not *Leiurus* Ehr., 1829, arachnoid; *Leiurus* Swains., 1839, fish; *Leiurus* Gray, 1845, reptile.]
- Lepidonema* Cobb, 1898a, March, 315. *L. bifurcata* Cobb, 1898a, p. 315, figs. 36, i-iv; Apr., 453, fig. 127, only species, hence type.
- leptocephalus* Rudolphi, 1819a, 649-650.
 1819: *Strongylus*. 1850: *Leiuris* (type).
- Leptodera* Dujardin, 1845a, 106, 108-109. *L. flexilis* Dujardin, 1845a, 109, pl. 6, fig. A, only species, hence type.
 1845: *Leptoderes* Dujardin, 1845a, 2, 653; changed to *Leptodera* Dujardin, 1845a, 106, 108-109.
 [Not *Leptodeira* Fitz., 1843, reptile; *Leptodira* for *Leptodeira*; *Leptodirus* Sturm., 1849, coleopteron; *Leptodirus* for *Leptoderus*; *Leptoderus* Schmidt, 1849, coleopteron.]
- Leptoderes* Dujardin, 1845a, 2, 653; changed to *Leptodera* Dujardin, 1845a, 106, 108-109.
 [Not *Leptoderes* Serv., 1839, orthopteron; *Leptoderis* Billb., 1820, coleopteron.]
- Leptolæmus*. See *Leptolaimus*.
- Leptolaimus* de Man, 1876, 168-171. *L. papilliger* de Man, 1876, 169-171, pls. 10, 11, figs. 42, a-e, only species, hence type.
 [?]: *Leptolæmus*. [See Scudder, 1884, 172.]
- Leptosomatum* Bastian, 1865c, 94, 144-147. Type by original designation *L. elongatum*.
 [Not *Leptosoma* Whitman, 1886, worm; *Leptosomatium* Kraatz, 1895, insect.]
- elongatum* Bastian, 1865c, 145, pl. 12, figs. 156-157.
punctatum (Eberth, 1863) Bastian, 1865c, 145.
gracile Bastian, 1865c, 145-146, pl. 12, figs. 158-160.
bacillatum (Eberth, 1863) Bastian, 1865c, 146.
figuratum Bastian, 1865c, 146-147, pl. 12, figs. 161-163.
coronatum (Eberth, 1863) Bastian, 1865c, 147.
longissimum (Eberth, 1863) Bastian, 1865c, 147.
subulatum (Eberth, 1863) Bastian, 1865c, 147.

leptura Rudolphi, 1819a, 48, 288.

1819: *Ascaris*. 1866: *Oxyrama*.

Lepturis Schlotthaufer, 1860, 126. *L. curvula* = *Oxyuris curvula*, only species, hence type. See *Oxyuris*.

[Not *Leptura* Linnaeus, 1758, 1767, coleopteron; *Lepturus* Brisson, 1760, bird; *Leptourus* Swainson, 1838, bird.]

lepturus Marion, 1870, 16–17, pl. C, fig. 1.

1870: *Stenolaimus* (type).

limacis Dujardin, 1845a, 263, pl. 4, fig. B. Renamed *angiostoma* Schneider, 1866, 157.

1845: *Angiostoma* (type). [1866: *Leptodera angiostoma*.]

limacis Barthélemy, 1858a, 41–48, pl. 5, figs. 8–15.

1858: *Ascaroides* (type).

limalis Bastian, 1865c, 141–142, pl. 11, figs. 146–148.

1865: *Anticoma*.

Lineola Koelliker, 1845b, 86–89. [Compare *Lineola* Bær, 1827, polyg.] Type probably *L. sieboldii*.

Linguatula "Schränk, 1796, 227–232" [not accessible to us]. Type species probably *L. bilinguis*.

[Not *Linguatula* Frélich, 1789, arachnoid.]

bilinguis Schränk, 1796, 231, n. 1, pl. 2, A, B. [Compare *Tentacularia cylindrica* Zeder, 1803a, 45, pl. 1, fig. 2.] To *Hamularia cylindrica* (Zeder) Rudolphi, 1809a, 83; to *Filaria nodulosa* by Diesing, 1851a, 275; compare *Monopetalonema obtuso-caudatum* by Diesing, 1861a, 710.

unilinguis Schränk, 1797, 231, no. 2. To *Hamularia nodulosa* by Rudolphi, 1809a, 84; to *Trichosoma longicollis* by Rudolphi, 1819a, 14. See *Capillaria semiteres*.

trichocephala Schränk, 1797, 232, n. 3. To *Trichocephalus capillaris* by Rudolphi, 1809a, 86; to *Trichosoma brevicollis* by Rudolphi, 1819a, 13. Type of *Capillaria*, 1800.

Linhomæus Bastian, 1865c, 154–155, 178. Type species *L. hirsutus*, designated by Bastian in letter to Stiles, dated March 22, 1904.

1865: *Linhomomius* Bastian, 1865c, 94, 178; corrected to *Linhomæus* Bastian, 1865c, 154–155, 178.

hirsutus Bastian, 1865c, 154–155, pl. 12, figs. 178–179. ♀

elongatus Bastian, 1865c, 155, pl. 12, figs. 180–181. ♂

Linhomomius Bastian, 1865c, 94, 178; corrected to *Linhomæus*.

Liniscus Dujardin, 1845a, 4, 29–30. *L. exilis* Dujardin, 1845a, only species, hence type.

[Not *Liniscus* Lefèvre, insect (Zool. Rec. (1885), 1886, v. 22, Index, 6);

Liniscus Hæckel, 1880, cœlenterate (Zool. Rec. (1880), 1881, v. 17, Index, 7).]

Liorhynchus Rudolphi, 1801, 49. Type species ? *L. truncatus*. See p. 62.

1803: *Ciorhynchus* Zeder, 1803a, viii. Misprint for *Liorhynchus*.

1816: *Liorhynchus* Olfers, 1816, 52. For *Liorhynchus*.

1866: *Liorhynchus* Schneider, 1866, 13, 15. For *Liorhynchus*.

Ascaris tubifera Fabricius, 1780a, 273. [To *Echinorhynchus* by Zeder, 1803a; returned to *Liorhynchus* by Rudolphi, 1809a.]

Ascaris truncata Rudolphi, 1793, 12.

Ascaris pulmonalis Gmelin, 1790a, 3035. To *Ascaris nigrovenosa* by Rudolphi, 1802, 17. Type of *Rhabdonema*, 1883.

Gæzia inermis Zeder, 1800a, 101–102. [To *Cochlus* in 1803; returned to *Liorhynchus* by Rudolphi, 1809a.]

Liorhynchus Rudolphi—Continued.

- *Liorhynchus truncatus* is the only species of this genus which Rudolphi examined personally. In 1809, Rudolphi mentions: *Liorhynchus truncatus* (Rudolphi); *Liorhynchus gracilescens* Rudolphi, 1809a = *Ascaris tubifera* Fabricius renamed; and *Liorhynchus denticulatus* Rudolphi, 1809a = *Gaezia inermis* renamed and figured.

Liorrhynchus Olfers, 1816, 52; = *Liorhynchus* Rudolphi.

Lissonema Linstow, 1903, 117–119. *L. rotundatum* Linstow, 1903, 117–119, figs. 16–20, only species, hence type.

Lissonoma Linstow, 1903, 117, 118. Misprint for *Lissonema*.

Litosoma van Beneden, 1873b, 21. *L. filaria* van Beneden, 1873b, 21, pl. 5, figs. 1–5, only species, hence type.

[Not *Litosoma* Douglas & Scott, 1865, 334–335, hemipteron; *Litosomus* Lacordaire, 1866, coleopteron.]

Lobocephalus Diesing, 1838a, 189. *L. heterolobus* Diesing, 1838a, 189, only species, hence type. Nomen nudum except for habitat. See also *Heterocheilus*.

[Not *Lobocephalus* Kramer, 1898, arachnoid.]

Lombricoides Mérat, 1821, 225. *L. vulgaris* = *Ascaris lumbricoides*, only species, hence type.

longemucronatum Molin, 1861, 536–537, pl. 6, figs. 3–4.

1861: *Globocephalus* (type). 1895: *Cystocephalus* (type). 1902: *Characostomum* (type).

longestriata Molin, 1860, 958.

1860: *Spiroptera*. 1861: *Cheilospirura*.

longesubulatum Molin, 1861, 460–462, pl. 2, figs. 1–2.

1861: *Eucyathostomum* (type).

longevaginus Diesing, 1851a, 317.

1851: *Strongylus*. 1861: *Metastrongylus*.

longicauda Cobb, 1893a, Oct., 819–820, fig. 37.

1893: *Neonchus* (type).

longicauda Cobb, 1893a, Oct., 825, fig. 41.

1893: *Cephalonema* (type). 1905: *Nanonema* (type).

longicauda de Man, 1893, 85–86, pl. 5, fig. 3.

1893: *Trefusia* (type).

longicaudata Bastian, 1865c, 98, pl. 9, figs. 5–6.

1865: *Monhystera*.

longicirrus Dujardin, 1845a, 148.

1845: *Heligmus* (type).

longicollis Bastian, 1865c, 133, pl. 11, figs. 119–122.

1865: *Symptlocostoma* (type).

longifilum Dujardin, 1845a, 27–28. ♂

1845: *Calodium*.

longipene Molin, 1861, 446–448.

1861: *Esophagostoma*.

longissima Eberth, 1863a, 21, pl. 2, fig. 8.

1863: *Phanoglene*. 1865: *Leptosomatium*.

longus Leidy, 1851, 225.

1851: *Anguillula*. 1865: *Trilobus*.

longus Cobb, 1894c, Apr. 13, 415–416, figs. 11, i–v.

1894: *Laxus* (type).

lumbricoides Linnæus, 1758a, 648.

1758: *Ascaris* (type). [1780: *Stomachida vermis* (type).] 1800: *Fusaria* (type). [1821: *Lombricoides* (type).]

Lumbricus Linnæus, 1758a, 644, 647-648. Type species *L. terrestris*; see p. 64.

terrestris Linnæus, 1758a, 647-648.

marinus Linnæus, 1758a, 648.

Lumbricus terrestris contained, in part, *Ascaris lumbricoides*, and many earlier authors used *Lumbricus* for this parasite. Linnæus's (1758a, 648) use of *Ascaris lumbricoides*, 1758, should be interpreted as eliminating this species from *Lumbricus*, and on this account *Lumbricus* no longer comes into consideration in connection with the nematodes. Cuvier (1798a, 630-631) mentions only *L. terrestris*; by the Linnæan rule, p. 64, this should be type.

lymphatica Treutler, 1793, 10-13, pl. 2, figs. 3-7.

1793: *Hamularia* (type). 1800: *Tentacularia* (type).

Lyorhynchus Schneider, 1866, 13-15; for *Liorhynchus* Rudolphi.

Macrolaimus Maupas, 1900, 578-582. *M. crucis* Maupas, 1900, 578-582, pl. 26, figs.

4-10, only species, hence type.

macrolaimus Linstow, 1904, Sept. 10, 491-492, figs. 13-15.

1904: *Neomermis* (type).

Macroposthonia de Man, 1880, 58-59. *M. annulata* de Man, 1880, 59, only species, hence type.

macrostoma Bastian, 1865c, 101-102, pl. 9, figs. 29-30.

1865: *Mononchus*.

maculosa Rudolphi, 1802, 22-23.

1802: *Ascaris*. 1845: *Ascaris* (*Ascaridia*).

magnum Villot, 1875, 458, pl. 11, figs. 2, a-b.

1875: *Leptosomatum*. 1889: *Cycolaimus* (type).

major Raspail, 1829, May, 244, pls. 7-8. [See *filum*, 1845.]

1829: *Strongylus*. [1845: *Pseudalius* (type).]

manica Dujardin, 1845a, 22-23.

1845: *Thominx* (type).

marina Buetschli, 1874b, 285, pl. 3, fig. 13.

1874: *Odontophora* (type).

marina Buetschli, 1874b, 269-270, pl. 3, figs. 12, a-c.

1874: *Tripyla*. [1886: *Tripyloides*.]

marinum Leidy, 1855, 144.

1855: *Pontonema*.

marinus Linnæus, 1758a, 648.

1758: *Lumbricus*.

marinus Mueller, 1779, 99-101 [or 1777, 50-51, pl. 38, figs. 1-11]. [See also *foveolatus*.]

[? 1777: *Cucullanus* (? type).] 1779: *Cucullanus*.

marinus Mueller, 1783, 163.

1783: *Vibrio*. "1786: *Anguillula*." 1836: *Enchelidium* (type).

marinus Dujardin, 1845a, 231, pl. 3, fig. D.

1845: *Dorylaimus*.

marioni de Man, 1888, 32-34, pls. 2, 3, fig. 15.

1888: *Dolicholaimus* (type).

martis Gmelin, 1790a, 3040. See under *Filaria*.

1790: *Filaria* (type).

Mastigades Zeder, 1803a, 30. Misprint for *Mastigodes*.

Mastigodes Zeder, 1800a, 5-6; = *Trichuris* Röederer & Wagler, 1761, renamed; hence type species *Mastigodes hominis* = *Trichuris trichiura*.

1803: *Mastigades* Zeder, 1803a, 30. Misprint.

1816: *Mastigoides* Lamarck, 1816, 212. Misprint.

Mastigoides Lamarck, 1816, 212. Misprint for *Mastigodes*, 1800.

Mastophorus Diesing, 1853a, 34. Type species probably *M. echiurus*.

[Not *Mastopora* Eichw., 1840, mollusk; *Mastigophora* Poey, 1832, lepidopteron.]
globocaudatus Diesing, 1853a, 34. Host *Geotrupes stercorarius*. Only immature stages observed.

echiurus Diesing, 1853a, 34. Host *T-nebrio molitor*. Only immature stages observed. Probably type, because its host is so common.

medinensis Linnæus, 1758a, 647. Renamed *dracunculus* Bremser.

1758: *Gordius*. 1759: *Dracunculus* (type). 1773: *Dracunculus* (type). 1773: *Vena* (type). 1790: *Filaria*. 1792: *Nervus* (type). 1795: *Furia vena*.

mediterranea de Man, 1877, 108–109, pl. 9, figs. 14, a–c.

1877: *Spira*. 1888: *Aræolaimus*.

megalochila Diesing, 1851a, 278–279.

1851: *Filaria*. [1851: *Tricheilostomi* (type).] [1861: *Schizocheilonema* (type).]
 1861: *Tricheilonema* (type).

megastoma Rudolphi, 1819a, 22–23, 236.

1819: *Spiroptera*. 1849: *Spirura*. 1866: *Filaria*.

megatyphlon Rudolphi, 1819a, 47, 285–286.

1819: *Ascaris*. 1845: *Ozolaimus* (type). 1866: *Oxyuris*.

melancholicus de Man, 1880, 35.

1880: *Cylindrolaimus*.

Meloidogyne Gœldi ?, “1887, 67–68;” 1889a, 28. Feb., 266; 1892a, 68. *M. exigua*,
 Gœldi ?, “1887;” 1889a, 28. Feb., 266; 1892a, 68, only species, hence type.

Menopetalonema Linstow, 1878, 74. Misprint for *Monopetalonema*.

Merinthoidea Kræmer, 1853a. See *Merinthoidum*.

Merinthoidum Kræmer, 1853a, 291–293. Proposed as an artificial collective group and as such it has no type species. Originally contained only one species, *Merinthoidum mucronatum chironomi plumosi* Kræmer, 1853a, 291–293, pl. 11, figs. 9–10, fig. 15 in text.

Mermis Dujardin, 1842a, 117–119; 1842e, 129, pl. 6. *M. nigrescens*, only species, hence type.

Metastrongylus Molin, 1861, 437, 588–594. Type species *M. paradoxus*.

longevaginatus (Diesing, 1851) Molin, 1861, 589–590, pl. 8, fig. 7.

paradoxus (Mehlis, 1831) Molin, 1861, 591.

lævis (Dujardin, 1845) Molin, 1861, 592.

costellatus (Dujardin, 1845) Molin, 1861, 592.

polygyrus (Dujardin, 1845) Molin, 1861, 592–593.

depressus (Dujardin, 1845) Molin, 1861, 593.

minutus (Dujardin, 1845) Molin, 1861, 593–594.

gracilis (Leuckart, 1842) Molin, 1861, 594.

Molin figures only the first species, but as this is probably identical with the second, and as the second is the most common, best known, and most easily obtained of any of the eight species in question, *M. paradoxus* is herewith designated type of *Metastrongylus*.

micans Nordmann, 1840, 664.

1840: *Phanoglene* (? type).

micans M. Schultze in Carus, 1857a, pl. 8, fig. 1.

1857: *Diplogaster* (type).

Microilaimus de Man, 1880, 15–16. *M. globiceps* de Man, 1880, 15–16, only species, hence type.

[Not *Microlamia* H. W. Bates, 1874, coleopteron (Zool. Rec. (1874), 1876, v. 11, 327).]

microphthalms de Man, 1893, 86–89, pl. 5, fig. 4.

1893: *Aræolaimus* (*Aræolaimoides*) [type].

- microstomus* Dujardin, 1845a, 234-235.
1845: *Enoplus*.
- migrans* Lespès, 1856, 335-336.
1856: *Isakis* (type).
- minimum* Molin, 1857, 218-220, figs. 1-6.
1857: *Gongylonema* (type).
- minus* de Man, 1876, 120-122, pl. 6, figs. 16, a-b.
1876: *Tylencholaimus*.
- minor* Kuhn, 1829a, Apr., 152. See also *inflexus*.
1829: *Strongylus*. 1851: *Prosthecosacter* (type).
- minor* Cobb, 1891c, Dec. 22, 156.
1891: *Dipeltis*.
- minor* Looss, 1900, 190-191.
1900: *Triodontus*. 1902: *Triodontophorus*.
- minus* Marion, 1870, 23-24, pl. G, fig. 1.
1870: *Enoplostoma*.
- minuta* van Beneden, 1871a, 17.
1871: *Coronilla*.
- minuta* van Beneden, 1873b, 22, pl. 5, figs. 6-11.
1873: *Ascarops* (type).
- minutissima* Goeze, 1782a, 40, 110.
1782: *Ascaris*.
- minutus* Rudolphi, 1819a, 21.
1819: *Cucullanus*. 1851: *Histiocephalus*.
- minutus* Dujardin, 1845a, 118.
1845: *Strongylus*. 1861: *Metastrongylus*.
- minutus* Claparède, 1863a, 89-90, pl. 18, figs. 4-7.
1863: *Desmoscolex* (type).
- mirabile* Leuckart, 1884, 320.
1884: *Allantonema* (type).
- mirabilis* Buetschli, 1873a, 44-45, pl. 19 (3), figs. 14, a-b.
1873: *Tylenchus*. 1876: *Tylencholaimus* (type).
- Mitrephoros* von Linstow, 1877, 18. See *Mitrephorus*
- Mitrephorus* von Linstow, 1877, 2. *M. hæmisphæricus* von Linstow, 1877, 2, only species, hence type.
1877: *Mitrephoros* Linstow, 1877, 18. For *Mitrephorus*.
[Not *Mitrephorus* Schœnherr, 1837, coleopteron; *Mitrephorus* Sclater, 1859, bird; *Mitrophorus* Burm., 1844, coleopteron.]
- monacanthus* Diesing, 1853a, Jan., 35.
1853: *Cephalacanthus* (probably type).
- Monhystera* Bastian, 1865c, 93, 97-99. Type species *M. stagnalis*, designated by Bastian in letter to Stiles, dated March 22, 1904.
1889: *Monhystera* de Man, 1889, 7. For *Monhystera*.
- stagnalis* Bastian, 1865c, 97, pl. 9, figs. 9-11. ♂ ♀
- dispar* Bastian, 1865c, 97, pl. 9, figs. 1-2. ♀
- rivularis* Bastian, 1865c, 97-98, pl. 9, figs. 3-4. ♂
- longicaudata* Bastian, 1865c, 98, pl. 9, figs. 5-6. ♀
- filiformis* Bastian, 1865c, 98, pl. 9, figs. 7-8. ♀
- disjuncta* Bastian, 1865c, 98, pl. 9, figs. 12-13; ♂ as doubtful member of this genus.
- ambigua* Bastian, 1865c, 98, pl. 9, figs. 14-15; ♂ as doubtful member of this genus.
- monilis* Hammerschmidt, 1838a, 358, pl. 4, fig. a.
1838: *Anguillina* (type).

Monodontus Molin, 1861, 435, 463-470. Type species *M. semicircularis*.

[Not *Monodon* Linnaeus, 1735, 1758, 1766, mammal; *Monodon* Cuvier, 1817, mollusk; *Monodon* Schweigger, 1820, mollusk; *Monodon* Gerv., 18—, mollusk; *Monodonta* Lamarck, 1799, 1801, mollusk; *Monodontes* Montf., 1810, mollusk; *Monodus* Schulze, 1897, for *Monodon* Linnaeus, 1758.]

wedlii Molin, 1861, 467-469; includes *Strongylus cernuus* Creplin, 1829 = *Strongylus trigonocephalus* Rudolphi, 1809 = type of *Bunostomum* Railliet, 1902. *semicircularis* Molin, 1861, 469-470, pl. 2, figs. 3-4. Type; from *Dicotyles torquatus*.

Molin bases his anatomical discussion directly upon *M. semicircularis*, which is the only one of the two species he figures, and which further he (p. 464) specifically takes as an argument to justify his genus.

Monohystera de Man, 1889, 7. For *Monhystera*.

Mononchus Bastian, 1865c, 93, 100-103. Type species *M. truncatus*, designated by Bastian in letter to Stiles, dated March 22, 1904.

1865: *Monorchus* Marschall, 1873, 436. For *Mononchus* Bastian, 1865.

truncatus Bastian, 1865c, 101, pl. 9, figs. 25-26. ♀

papillatus Bastian, 1865c, 101, pl. 9, figs. 27-28. ♀

macrostoma Bastian, 1865c, 101-102, pl. 9, figs. 29-30. ♀

tunbridgensis Bastian, 1865c, 102, pl. 9, figs. 31-32. ♀

cristatus Bastian, 1865c, 102, pl. 9, figs. 33-34. ♀

fovearum (Dujardin, 1845) Bastian, 1865c, 102-103. ♀

muscorum (Dujardin, 1845) Bastian, 1865c, 103. ♀

crassiusculus (Dujardin, 1845) Bastian, 1865c, 103. ♀

A slight complication arises in connection with *Mononchus*, 1865, and *Oncholaimus*, 1845. Of the three original species of *Oncholaimus*, Diesing (1851a, 125) transferred *attenuatus* to *Enoplus*, thus leaving *fovearum* and *muscorum*. Under such circumstances one of these species would most naturally be selected as type. Bastian (1865c) returned *attenuatus* to *Oncholaimus* and transferred *fovearum* and *muscorum* to *Mononchus*. Many authors would hold that Bastian was in error in this action, and that *Mononchus* should fall as a synonym of *Oncholaimus* on the ground that it contained the only two remaining species of *Oncholaimus*. Were it not for the fact that Bastian has written us that he intended *truncatus* as type of *Mononchus* we should be inclined to follow that ruling, but as the original author's intentions should be recognized, we accept *truncatus* as type of *Mononchus*.

Oncholaimus now takes *attenuatus* as type by Bastian's designation, provided it is admitted that he was justified in returning the species for the sake of establishing the type.

Monopetalonema Diesing, 1861a, 620, 710. Type species? *M. physalurum* by page precedence, or? *obtusum-caudatum* by inclusion. See *bilinguis*.

physalurum (Bremser, 1851) Diesing, 1861a, 710. ♂ ♀

obtusum-caudatum Diesing, 1861a, 710; ♂ ♀ = *Filaria nodulosa* Rudolphi, 1820; = *Filaria obtusum-caudata* Rudolphi, 1819a.

Monoposthia de Man, 1889, 9-10. Type by original designation *Spilophora costata* Bastian, 1865c.

Monorchus Marschall, 1873, 436. Misprint for *Mononchus* Bastian, 1865.

[Not *Monorchis* Monticelli, 1893, trematode.]

monostichum Diesing, 1851a, 306.

1851: *Sclerostomum*. 1861: *Esophagostoma*.

montredonense Marion, 1870, 27-29, pl. I, fig. 1.

1870: *Thoracostoma*.

morhuæ.

1871: *Ascarophis* (apparently type).

morstatti Marion, 1870, 31-32, pl. J, fig. 1.

1870: *Rhabdotoderma* (type).

mucronata Molin, 1858, 155.

1858: *Filaria*. 1861: *Dipetalonema*.

mucronatum Molin, 1861, 474-475, pl. 3, fig. 1.

1861: *Diploodon* (type).

mucronatus Molin, 1861, 547-548.

1861: *Kalicephalus*.

muris Schrank, 1788, 21.

[1782: *Pseudoechinorhynchus* (? type).] 1788: *Echinorhynchus*. 1790: *Hæruca* (type).

muscæ Carter, 1861d, 30-33, pl. 1A, figs. 1-4.

1861: *Filaria*. 1861: *Habronema* (type).

muscorum Dujardin, 1845a, 237.

1845: *Oncholaimus* (? type, see also *forcærum* and *attenuatus*). 1865: *Mononchus*.

"*mustelarum* [*pulmonalis*] Rudolphi," 1819a, 8, 216. See also *Ascaris bronchialis*.

1819: *Filaria*. 1858: *Filaroides* (type).

Myenchus Schuberg & Schröder, 1904, in Schuberg, 1904, Feb. 22, 629-632. *M. bothryophorus* Schuberg & Schröder, 1904, 629-632, only species, hence type.

Myzomimus Stiles, 1892, 65-67. *M. scutatus* (Mueller, 1869) Stiles, 1892, 65-67, 1 fig., only species, hence type.

Nanonema Cobb, 1905, in Stiles & Hassall, 1905, 122. New name for *Cephalonema* Cobb, 1893a [not Stimps., ante, 1882]; hence type species *Nanonema longicauda* (Cobb, 1893) Cobb, 1905, 122.

nasuta Rudolphi, 1819a, 23, 238.

1819: *Spiroptera*. 1845: *Dispharagus*.

natans Bastian, 1865c, 155-156, pl. 13, figs. 182-184.

1865: *Tachyhodites* (type).

natans Bastian, 1865c, 168-169, pl. 13, figs. 236-238.

1865: *Chromadora*.

Necator Stiles, 1903, Aug. 1, 312. *Uncinaria americana*, only species, hence type. Originally a subgenus of *Uncinaria*.

Necticonema Marion, 1870, 32-34. *N. prinzi* Marion, 1870, 33-34, pl. J, fig. 2, only species, hence type.

Nectonema Verrill, 1879, Nov. 5, 187-188. *N. agilis* Verrill, 1879, Nov. 5, 187-188, only species, hence type.

Needhamia Carus. [Not accessible to us.]

neglecta Diesing, 1851a, 296; [= *gibbosus* Rudolphi, 1819, renamed].

[1819: *Trichocephalus*.] 1851: *Oncophora* (type).

Nema Leidy, 1856, 49-50. *N. vacillans* Leidy, 1856, 50, only species, hence type.

Nematodum Diesing, 1861a, 724-726. It is doubtful whether this should be interpreted as a generic name. It seems rather to be an indefinite collective name "nematode."

Nematoideum Diesing, 1851a, 329-342. Collective group of artificial value and without any type species.

Nematorxys Schneider, 1866, 29, 111-113. Type species by inclusion *N. ornatus*. See also *Cosmocerca*.

ornatus (Dujardin, 1845) Schneider, 1866, 112-113, pl. 12, fig. 5; pl. 18, fig. 4.

Type of *Cosmocerca*, 1861.

commutatus (Diesing, 1851) Schneider, 1866, 113, pl. 12, fig. 2; pl. 18, fig. 3.

Schneider apparently overlooked the fact that Diesing, 1861, had proposed the genus *Cosmocerca* to include these same two species, hence, *Nematorxys* = *Cosmocerca* renamed, and consequently takes the same species, *Cosmocerca ornata*, as type.

- Neoechinorhynchus* Hamann in Stiles & Hassall, 1905, 123. Type *N. clavæceps* (Zeder, 1800) Hamann, 1905, 123. Proposed by Hamann in letter to Stiles, dated Nov. 29, 1903, for *Neorhynchus* Hamann, 1892d; not Sclater, 1869.
- Neomermis* Linstow, 1904, Sept. 10, 491-492. *N. macrolaimus* Linstow, 1904, 491-492, figs. 13-15, only species, hence type.
- Neonchus* Cobb, 1893a, Oct., 819-820. *N. longicauda* Cobb, 1893a, 819-820, fig. 37, only species, hence type.
- Neorhynchus* Hamann, 1892d, 197. Type species *N. clavæceps*, designated by Hamann, in letter to Stiles, dated Nov. 29, 1903. Renamed *Neoechinorhynchus*.
clavæceps (Zeder, 1800) Hamann, 1892d, 197.
agilis (Rudolphi, 1819) Hamann, 1892d, 197.
 [Not *Neorhynchus* Sclater, 1869, bird; *Neorhynchus* Milne-Edwards, 1879, crustacean.]
- Nervus* [see Laporte, 1792, 531]. *Nervus medinensis* = *Dracunculus medinensis*, only species, hence type.
- Netrorhynchus* Zenker, 1827, 53. *N. blainvillii* Zenker, 1827, 53, only species, hence type.
- niger* de Man, 1893, 100-102, pl. 6, fig. 8.
 1893: *Siphonolaimus* (type).
- nigrescens* Dujardin, 1842a, 117-119; 1842e, 129, pl. 6.
 1842: *Mermis* (type).
- nigricans* Cobb, 1894c, Apr. 13, 416-417.
 1894: *Chromagaster*.
- nigrovenosa* Gæze in Zeder, 1800a, 48.
 1800: *Fusaria*. 1800: *Ascaris*. 1841: *Oxyuris*. 1882: *Angiostomum*. 1883: *Rhabdonema* (type). 1905: *Rhabdias* (type).
- nitidum* Leidy, 1856, 49.
 1856: *Potamonema* (type).
- nodulosa* Rudolphi [1820], 13.
 1820: *Filaria*. [1861: *Monopetalonema*.]
- nudicapitata* Bastian, 1865c, 168, pl. 13, figs. 230-232.
 1865: *Chromadora*.
- obtusa* Cobb, 1893a, Oct., 811.
 1893: *Brachynema* (type).
- obtuse-caudatum* Diesing, 1861a, 710. See *obtuso-caudatum*.
 [1819: *Filaria*.] 1861: *Monopetalonema*.
- obtuso-caudata* Rudolphi, 1819a, 634. See also *obtuse-caudatum*.
 1819: *Filaria*.
- obtuso-caudata* Kœlliker, 1845b, 88-89.
 1845: *Lineola*.
- obtusus* Dujardin, 1845a, 105.
 1845: *Proleptus*.
- obtusus* Dujardin, 1845a, 107.
 1845: *Eucamptus* (type).
- obtusus* Bastian, 1865c, 128, pl. 10, figs. 117-118.
 1865: *Tylenchus*.
- obtusus* Cobb, 1894c, Apr. 13, 419-420, figs. 13, i-iv.
 1894: *Solenolaimus* (type).
- ocellata* Carter, 1859b, July, 43, pl. 3, fig. 31.
 1859: *Urolabes*. 1863: *Phanoglene*. 1865: *Chromadora*.
- ocellatus* Bastian, 1865c, 163, pl. 13, figs. 210-212a.
 1865: *Cyatholaimus* (type).

ococornutus Molin, 1860, 344.

1860: *Elaphocephalus* (type).

oculata Marion, 1870, 35, pl. K, fig. 2.

1870: *Acanthopharynx*.

Odontobius Roussel, 1834, 326-331. *O. ceti* Roussel, 1834, 326-331, only species, hence type.

Odontolaimus de Man, 1880, 61-62. *O. chlorurus* de Man, 1880, 61-62, only species, hence type.

Odontophora Buetschli, 1874b, 285. *O. marina* Buetschli, 1874b, 285, pl. 3, fig. 13, only species, hence type.

[Not *Odontophorus* Vieillot, 1816, bird.]

Œsophagodontus Railliet & Henry, 1902, 7. Feb., 110-111. *O. robustus* (Giles, 1892) Gedælst, 1903a, 57, 92, only species, hence type.

Œsophagostomum Molin, 1861, 435, 443-450. Type species *O. subulatum* = *O. dentatum* (Rudolphi, 1803).

subulatum Molin, 1861, 445-446, pl. 1, figs. 3-4. ♂ ♀

longipene Molin, 1861, 446-448. ♂ ♀

monostichum (Diesing, 1851) Molin, 1861, 448-449. ♂ ♀

acutum Molin, 1861, 449. ♂ ♀

pachycephalum Molin, 1861, 450. ♂ ♀

As Molin designated no type, we herewith designate as such the species *Œsophagostomum subulatum* = *Strongylus dentatus* Rudolphi, 1803, this selection being made for the following reasons: (1) As this form inhabits a domesticated animal, it is much more easy to obtain than forms inhabiting wild animals; (2) it is the only species Molin figured; (3) Molin evidently intended this species as type, although he did not definitely designate it as type; (4) this designation agrees with the principle of page precedence.

Ōllulanus R. Leuckart, 1865, 227. *O. tricusps* Leuckart, 1865, 227, only species, hence type.

Onchalaimus de Rouville, 1903, 11. Dec., 1528. Misprint for *Oncholaimus*.

Onchocerca Diesing, 1841, 200 [in J. Hermann, 1841b, 199-200]. *O. reticulata* Diesing, 1841, 200, only species, hence type.

1846: *Oncocerca* Creplin, 1846b, 171; for *Onchocerca*.

Oncholaima Dujardin, 1845a, 3, 653. Changed to *Oncholaimus* Dujardin, 1845a, 230, 235-237, 653.

Oncholaimellus de Man, 1890, 189-192. *O. calvadosicus* de Man, 1890, 190-192, pl. 5, fig. 10, only species, hence type.

Oncholaimus Dujardin, 1845a, 230, 235-237, 653. Type species probably *O. attenuatus*. See discussion under *Mononchus*, 121.

1845: *Oncholaima* Dujardin, 1845a, 3, 653. Changed to *Oncholaimus* Dujardin, 1845a, 230, 235-237, 653.

1865: ? *Mononchus* Bastian, 1865c, 93, 100-103; includes both *fovearum* and *muscorum*.

1903: *Onchalaimus* de Rouville, 1903, 1528. Misprint.

attenuatus Dujardin, 1845a, 236. ♂ To *Enoplus* by Diesing, 1851a, 125. Type of *Oncholaimus* according to Bastian, 1865c, 100, and de Man, 1886, 9.

fovearum Dujardin, 1845a, 236-237. ♀ To *Mononchus* by Bastian, 1865c, 102. *muscorum* Dujardin, 1845a, 237. ♀ To *Mononchus* by Bastian, 1865c, 103.

Oncocerca Creplin, 1846b, 171. See *Onchocerca*.

Oncophora Diesing, 1851a, 81, 296. *O. neglecta* Diesing, 1851a; = *Trichocephalus gibbosus* Rudolphi, 1819a, renamed, only species, hence type.

[Not *Onchophora* Busk., 1855, mollusk; *Oncophorus* Rudow., 1874, neuropter; Eppelsheim, 1885, insect.]

Onyx Cobb, 1891c, Dec. 22, 146-155. *O. perfectus* Cobb, 1891c, 153-155, figs. 4, 5, 7, 8, i-v, only species, hence type.

[Not *Onix* Mayr & Forel, 1884, insect (Zool. Rec. (1884), 1885, v. 22, Index, 7).]

ophicephalum Claparède, 1863a, 88-89, pl. 18, figs. 2-3.

1863: *Chatosoma* (type).

Ophiostoma Rudolphi, 1801, 48. Type by inclusion *Cystidicola farionis* Fischer, 1798. See *Cystidicola*.

1839: *Ophiostomum* Creplin, 1839a, 283. *Ophiostoma* renamed.

[Not *Ophiostomus* for *Ophistomis* Dej., 1834, coleopteron.]

Ascaris phocæ Fabricius, 1780a, 272. [United with *Ascaris atax* Mueller, 1776, 214, *Ascaris neitsib* [neitsil] Mueller, 1776, 214, and *Ascaris bifida* Fabricius, 1780a, 273; (= *Proboscidea bifida* (Mueller) Lamarck, 1801), by Rudolphi, 1809a, 119, under the name *Ophiostoma dispar* Rudolphi, 1809a, 119; unidentifiable according to Krabbe, 1878.]

Ascaris globicola (Fabricius, 1780) Gmelin, 1790a, 3036; [= *Gordius globicola* Fabricius, 1780a; eliminated from *Ophiostoma* as doubtful by Rudolphi, 1810a, 279].

Ascaris rajæ Mueller, 1776, 214. [To *Proboscidea* by Tableau encycl., pl. 32, figs. 11-12; to *Fusaria* and *Ophiostoma* by Zeder, 1803a, 124, 128; eliminated from *Ophiostoma* as doubtful by Rudolphi, 1810a, 270.]

Ascaris bifida Mueller, 1780, 273. [United with *Ascaris phocæ* by Rudolphi, 1809a, 119.]

Cystidicola farionis Fischer, 1798b, 98. [Type of *Cystidicola*.] [To *Spiroptera* by Rudolphi, 1819a, 26-27, 245-246.]

Ophiostoma, 1801, was a deliberate renaming of an earlier monotypical genus, hence it takes the same type as the earlier genus. It is quite possible that *Ascaris bifida* is the type of *Proboscidea*. See also p. 45.

Ophiostomum Creplin, 1839a, 283; = *Ophiostoma* renamed.

ornata Dujardin, 1845a, 144-145, pl. 5, fig. G.

1845: *Ocyuris*. 1861: *Cosmocerca* (type). 1866: *Nematoxys* (type).

ornatum Dujardin, 1843a, 347, pl. 14, fig. B.

1843: *Trichosomum*. 1845: *Calodium*.

ornatus Eberth, 1863a, 40-41, pl. 4, figs. 13-15; pl. 5, figs. 5-6.

1863: *Enoplus*. 1865: *Symplocostoma*.

ornatus Bastian, 1865c, 163-164, pl. 13, figs. 215-216.

1865: *Cyatholaimus*.

ovata Zeder, 1803a, 36-37.

1803: *Filaria*. 1851: *Agamonema*.

oviflagellis Fourment, 1884a, 1-8, pl. 16, figs. 1-11.

1884: *Spinitectus* (type).

Oxiurus Sonsino, 1878, 613. Misprint for *Oxyuris*.

oxycaudata Greef, 1869a, 115-117, pl. 6, figs. 9-10.

1869: *Trichoderma* (type).

oxycephalus de Man, 1880, 31.

1880: *Aulolaimus* (type).

oxycerca de Man, 1888, 10-11, pl. 1, fig. 6.

1888: *Monohystera*. 1889: *Monohystera* (Penzancia).

Oxyinema von Linstow, 1899, 19-20. *O. rectum* von Linstow, 1899, 19-20, pl. 5, fig. 56, only species, hence type.

Oxysoma Schneider, 1866, 29, 114-116. Type species probably *O. brevicaudatum*, by page precedence and because of host.

[Not *Oxysoma* Gervais, 1849, arachnoid; Kraatz, 1865, coleopteron.]

Oxysoma Schneider—Continued.

- brevicaudatum* (Zeder, 1800) Schneider, 1866, 114–115, pl. 11, figs. 1–2; ♂ ♀ [= *Fusaria brevicaudata* Zeder, 1800a; = *Heterakis brevicaudata* (Zeder) Dujardin, 1845]. Host *Rana temporaria*.
- tentaculatum* (Rudolphi, 1819) Schneider, 1866, 115, pl. 7, fig. 13; pl. 12, fig. 1; ♂ ♀ [= *Ascaris tentaculata* Rudolphi].
- lepturum* (Rudolphi, 1819) Schneider, 1866, 115–116, pl. 7, fig. 14; pl. 12, fig. 3; ♂ ♀ [= *Ascaris leptura* Rudolphi].
- Oxyspirura* von Drasche in Stossich, 1897, 123–126. Type species *O. cephaloptera*, after Drasche, according to Stossich (letter to Stiles, dated Nov. 1, 1903).
- acuminata* (Molin, 1860) Stossich, 1897, 123. ♂
- anacanthura* (Molin, 1860) Stossich, 1897, 123–124. ♂ ♀
- brevisubulata* (Molin, 1860) Stossich, 1897, 124. ♂ ♀
- cephaloptera* (Molin, 1860) Stossich, 1897, 124–125. ♂ ♀
- sygmoidea* (Molin, 1860) Stossich, 1897, 125. ♂ ♀
- spiralis* (Molin, 1860) Stossich, 1897, 125–126. ♂ ♀
- brevipenis* (Molin, 1860) Stossich, 1897, 126. ♂ ♀
- Oxystoma* Buetschli, 1874b, 270–271. *O. elongata* Buetschli, 1874b, 270–271, pl. 4, figs. 18, a–d, only species, hence type.
- [Not *Oxystoma* Duméril, 1806, coleopteron; *Oxystoma* Blainville, 1825, mollusk, supergeneric; *Oxystomata* Haan, 18—, crustacean, supergeneric; Blainville, 1825, mollusk, supergeneric; *Oxystomus* G. Fischer, 1803, mammal; Rafinesque, 1810, fish; Latreille, 1825, coleopteron; Swains., 1837, bird.]
- Oxyuris* Rudolphi, 1803a, 6–8. *O. curvula* = *Trichocephalus equi* Schrank, 1788, 4, or Gmelin, 1790a, 3038; = *Oxyuris equi*, only species, hence type.
- 1816: *Oxyurus* Lamarck, 1816, 213–215. For *Oxyuris* Rudolphi, 1803.
- 1860: *Lepturis* Schlotthauber. Type *curvula*.
- 1878: *Oxiurus* Sonsino, 1878, 613. Misprint.
- [Not *Oxyurus* Rafinesque, 1810, fish; Swains., 1827, bird; *Oxyura* Bonap., 1828, bird; *Oxyura* for *Oxura* Kirby, 1817, coleopteron.]
- Oxyurus* Lamarck, 1816, 213–215. For *Oxyuris* Rudolphi, 1803a, hence type species *Oxyuris curvula*.
- Ozolaimus* Dujardin, 1845a, 136, 145–147. *O. megatyphlon* (Rudolphi, 1819) Dujardin, 1845a, only species, hence type.
- pachycephalum* Molin, 1861, 450.
- 1861: *Æsophagostoma*.
- paganelli* Molin, 1859, 32.
- 1859: *Nematoideum*. 1861: *Agamonematodum*.
- paludinæ* Hemprich & Ehrenberg, 1828a, unpagged, appendix.
- 1828: *Phacelura* (type).
- palustris* Carter, 1858a, June, 414.
- 1858: *Urolabes* (type).
- papillata* Bastian, 1865c, 170, pl. 13, figs. 247–248.
- 1865: *Chromadora*.
- papillatus* Bastian, 1865c; 101, pl. 9, figs. 27–28.
- 1865: *Mononchus*.
- papillatus* de Man, 1880, 4.
- 1880: *Deontolaimus* (type).
- papillatus* Cobb, 1898a, Mar., 320, figs. 45, i–iv.
- 1898: *Streptogaster* (type).
- papilliger* de Man, 1876, 169–171, pls. 10, 11, figs. 42, a–e.
- 1876: *Leptolaimus* (type).
- papilligera* Creplin, 1846b, 173.
- 1846: *Filaria*. 1851: *Agamonema*.

papillosa Schneider, 1866, 153-154, pl. 11, fig. 3.

1866: *Pelodera*.

papillosus Bloch, 1782a, 32, pl. 9, figs. 1-6.

1782: *Ascaris*. [1845: *Heterakis vesicularis* sub (type).]

Parachordodes Camerano, 1897g, 368, 389-398. Type species *P. tolosanus* (Dujardin, 1842) Camerano, 1897g, 398, by designation of Camerano in card to Stiles, dated Nov. 29, 1903.

vejdovskyi (Janda, 1894) Camerano, 1897g, 389. ♂

raphaelis (Camerano, 1893) Camerano, 1897g, 389. ♂ ♀

alfredi (Camerano, 1894) Camerano, 1897g, 390. ♂ ♀

latastei (Camerano, 1895) Camerano, 1897g, 390-391. ♂

abbreviatus (Villot, 1874) Camerano, 1897g, 391. ♂

pleskei (Camerano, 1896) Camerano, 1897g, 391-392. ♂ ♀

wolterstorffii (Camerano, 1888) Camerano, 1897g, 392. ♀

violaceus (Baird, 1853) Camerano, 1897g, 392-393. ♂ ♀

alpestris (Villot, 1884) Camerano, 1897g, 393-394. ♂ ♀

prismaticus (Villot, 1874) Camerano, 1897g, 394-395. ♂ ♀

kaschgaricus Camerano, 1897g, 395. ♀

gemmatus (Villot, 1884) Camerano, 1897g, 395-396. ♂ ♀

pustulosus (Baird, 1853) Camerano, 1897g, 396-397. ♂ ♀

tolosanus (Dujardin, 1842) Camerano, 1897g, 398. ♂ ♀ Type.

paradoxa Mayer, 1835, 67-72, figs. 1-3.

1835: *Rhytis* (type).

paradoxa Cobbold, 1864b, 79.

1864: *Simondsia* (type).

Paradoxites Lindemann, 1865, 492-496. Type species *P. renardi*, by present designation, because of page precedence, and only species figured.

renardi Lindemann, 1865, 495, pl. 12, figs. 1-6.

taenioides Lindemann, 1865, 496.

[Not *Paradoxites* Goldf., 1843, crustacean; *Paradoxides* Brongn. (? date), crustacean.]

paradoxum Kœlliker, 1849d, 59-66, pl. 5, figs. 1-12.

1849: *Dicyema* (type).

paradoxum Marion, 1870, 12-13, pl. A, fig. 2.

1870: *Calyptronema* (type).

paradoxus Mehlis, 1831, 84.

1831: *Strongylus*. 1861: *Metastrongylus* (type).

paradoxus Diesing, 1835a, 83, 94-105.

1835: *Tropisurus* (type). 1835: *Tropidurus* (type). [1846: *Tetrameres* (type).]

1851: *Tropidocerca* (type).

paradoxus Creplin, 1839a, 292.

1839: *Ancyrocephalus* (type). 1878: *Dactylogyrus*.

Paragordius Camerano, 1897g, 368, 399-402. Type species *P. varius*

tricuspidatus (Dufour, 1828) Camerano, 1897g, 400.

emeryi (Camerano, 1895) Camerano, 1897g, 401.

stylosus (von Linstow, 1883) Camerano, 1897g, 401-402.

varius (Leidy, 1851) Camerano, 1897g, 402. Type.

Paragordius was proposed independently by Montgomery, 1898, with *Paragordius varius* as only and type species.

Paragordius Montgomery, 1898, Apr., 45-47, 54. *P. varius* (Leidy, 1851) Montgomery, 1898, Apr., 45-47, figs. 78-93, only species, hence type. Same as *Paragordius* Camerano.

Paramermis von Linstow, 1898, Nov. 18, 167. Type species *P. crassa*.

Mermis crassa von Linstow, 1889, 392-396, pl. 22, figs. 2-8. ♂ ♀

Mermis aquatilis (Dujardin, 1845) von Linstow, 1898, 155-156, pl. 8, figs. 7-10.

♂ ♀

In reply to a personal letter asking Dr. von Linstow for the type of his genus *Paramermis* he writes under date of Nov. 23: "Die erste unter dem Genus-Namen *Paramermis* beschriebene Art ist *crassa*." From this we assume that he considers *crassa* as type.

parasitifera Bastian, 1865c, 159-160, pl. 13, figs. 201-203.

1865: *Spira* (type).

parasitus Creplin, 1847b, 161-165.

1847: *Chordodes* (type).

parietinus Bastian, 1865c, 118-119, pl. 10, figs. 79-80.

1865: *Plectus* (type).

parietinus Bastian, 1865c, 123, pl. 10, figs. 102-103.

1865: *Aphelenchus*.

parvus Bastian, 1865c, 120, pl. 10, figs. 89-90.

1865: *Plectus*.

parvus Bastian, 1865c, 156, pl. 13, figs. 185-186.

1865: *Tachyhodites*.

Passalurus Dujardin, 1845a, 230, 231-233. *Oxyuris ambigua* Rudolphi, 1819a, 19, 229, only species, hence type.

patagonicus de Man, 1904, 41-44, figs. 1-6.

1904: *Plectus* (*Plectoides* [probably type]).

pauli Marion, 1870, 15-16, pl. B, fig. 2.

1870: *Amphistenus*.

pectinatus Diesing, 1838a, 189. Renamed *Ancyracanthus pinnatifidus*.

1838: *Ancyracanthus* (type).

Pelagonema Cobb, 1894c, Apr. 13, 391-392. *P. simplex* Cobb, 1894c, 391-392, figs. 4, i-iv, only species, hence type.

pellio Schneider, 1866, 154, pl. 11, fig. 11.

1866: *Pelodera*.

pellucida Bastian, 1865c, 142, pl. 11, figs. 149-150.

1865: *Anticoma*.

pellucidus Bastian, 1865c, 100, pl. 9, figs. 23-24.

1865: *Trilobus*.

pellucidus Cobb, 1893a, Oct., 821, fig. 39.

1893: *Chaolaimus* (type).

Pelodera Schneider, 1866, 29, 148-154; = *Pelodytes* Schneider, 1860, renamed, hence type species *Pelodera strongyloides*. Also type by page precedence.

1860: *Pelodytes* Schneider, 1860, 228 [not Fitz. (? date), or Gistl., 1848]; type *Pelodytes strongyloides*.

strongyloides (Schneider, 1860) Schneider, 1866, 152-153, pl. 10, fig. 9. Type.

teres Schneider, 1866, 153, pl. 10, fig. 8.

papillosa Schneider, 1866, 153-154, pl. 11, fig. 3.

pellio Schneider, 1866, 154, pl. 11, fig. 11.

Pelodytes Schneider, 1860, 228, pl. 6, fig. 12. *Pelodytes strongyloides* Schneider, 1860, 228, pl. 6, fig. 12, only species, hence type. Renamed *Pelodera* Schneider, 1866, 148.

[Not *Pelodytes* Fitz., ante 1846, or Gistl., 1848, reptile; see Agassiz, 1842-46.]

pendula Leidy, 1851, 240.

1851: *Symplecta* (type).

- Penzancia* de Man, 1889, 7-8. Type species *Monhystera velox*, designated in letter from de Man to Stiles, dated Nov. 30, 1903. Subgenus of *Monohystera*.
 [*velox* (Bastian, 1865) de Man, 1889, 7-8.] (Type.)
 [*oxyerca* (de Man, 1888) de Man, 1889, 7.]
perarmata Marion, 1870, 34-35, pl. K, fig. 1.
 1870: *Acanthopharynx*.
perfectus Cobb, 1891e, Dec. 22, 153-155, figs. 4, 5, 7, 8, i-iv.
 1891: *Onyx* (type).
Peritrachelius Diesing, 1851a, 80, 209-210. *P. insignis* Diesing, 1851a, 210, only species, hence type.
persegnis Bastian, 1865c, 124-125, pl. 10, figs. 104-106.
 1865: *Cephalobus* (type).
perspicillum Rudolphi, 1803a, 9-10.
 1803: *Ascaris*. 1845: *Ascaris* (*Ascaridia*).
Phacelura Hemprich & Ehrenberg, 1828a, appendix, not paged. *P. paludina* Hemprich & Ehrenberg, 1828a, only species, hence type.
 [Not *Phacellura* for *Phakellura* Guild., 1840, lepidopteron.]
phalacrus Greef, 1869a, 118, pl. 7, figs. 5-6.
 1869: *Eubostrichus* (? type).
Phanoderma Bastian, 1865c, 94, 142-144. Type species *P. cocksi*, designated by Bastian in letter to Stiles, dated March 22, 1904.
cocksi Bastian, 1865c, 143, pl. 11, figs. 151-153. ♂ ♀
albidum Bastian, 1865c, 143-144, pl. 11, figs. 154-155. ♀
tuberculatum (Eberth, 1863) Bastian, 1865c, 144. ♂ ♀ [Not examined by Bastian.]
Phanoglene Nordmann, 1840, 664. Type species ? *P. micans*; see p. 67.
micans Nordmann, 1840, 664; in larva of a neuropteran.
barbiger Nordmann, 1840, 664; free form.
Pharurus R. Leuckart, 1848, 26-28. *Strongylus alatus* Leuckart, 1848, 26-28, pl. 2, figs. 3, A-D, only species, hence type.
Pharyngodon Diesing, 1861a, 614, 642. *P. acanthurus* (Diesing, 1851) Diesing, 1861a, 642, only species, hence type.
 [Not *Pharyngodon* Cope, 1865, reptile.]
phoca Fabricius, 1780a, 272. Includes *Ascaris neitsib* Mueller.
 1780: *Ascaris*. 1790: *Echinorhynchus*. [1801: *Ophiostoma*.] 1803: *Ophiostoma*.
 1816: *Fissula*. [?]: *Proboscidea*.
Physaloptera Rudolphi, 1819a, 29-30, 255-259. Type species *P. clausa*, by present designation, because of page precedence, only species figured, and common host.
clausa Rudolphi, 1819a, 29, 255-256, pl. 1, figs. 2-3. ♂ ♀
alata Rudolphi, 1819a, 29-30, 256-257. ♂ ♀
abbreviata Rudolphi, 1819a, 30, 257-258. ♂ ♀
retusa Rudolphi, 1819a, 30, 258. ♂ ♀
tenuicollis Rudolphi, 1819a, 30, 258-259; sp. dub. ♀
Physaloptera clausa is here designated type on the following grounds: (1) Of the original species, this alone is figured; (2) it occurs in an European animal which is not especially difficult to obtain, in fact, of the original hosts of *Physaloptera*, this host (*Erinaceus europaeus*) is probably the most easily obtainable; (3) Rudolphi's description of this species is more complete than his description of any other member of the genus; (4) this ruling agrees with page precedence.
physalura Bremser in Diesing, 1851a, 276-277.
 1851: *Filaria*. 1861: *Monopetalonema* (? type).
 6328—No. 79—05—9

Physocephalus Diesing, 1861a, 619, 686-687. *P. sexalata* (Molin, 1859) Diesing, 1861a, 686-687, only species, hence type.

[Not *Physocephala* Schin., 1861, dipteron.]

Piguris Schlotthaufer, 1860, 126. *P. reticulata*, only species, hence type.
pinguicola Verrill, 1870, 248-249, figs. 83, a-d.

1870: *Sclerostoma*. [1839: See *Stephanurus dentatus* (type).]

pinnatifidus Diesing, 1839a, 227-229, pl. 14, figs. 21-27. *Ancyracanthus pectinatus* renamed.

1839: *Ancyracanthus* (type).

plagiostoma Wedl, 1861, 464-466, pl. 1, figs. 5-11.

1861: *Pterygodermatiles* (type). 1873: *Rictularia*. [?]: *Ophiostoma*.

platessæ Rudolphi, 1809a, 116-117.

1809: *Cucullamus*. [1845: *Dacnitis esuriens* (? type) sub.]

Platycoma Cobb, 1894c, Apr. 13, 399-401. *P. cephalata* Cobb, 1894c, 399-401, figs. 7, i-iv, only species, hence type.

Plectoides de Man, 1904, 44-46. Type probably *Plectus patagonicus*. Subgenus of *Plectus*.

Plectus (*Plectoides*) *patagonicus* de Man, 1904, 41-44, figs. 1-6.

Plectus (*Plectoides*) *antarcticus* de Man, 1904, 44. (Only one specimen, a female.)

Plectus Bastian, 1865c, 93, 118-121. Type species *P. parietinus*, designated by Bastian in letter to Stiles, dated March 22, 1904.

[Not *Plectus*, for *Plectris* Lepell., Serville, 1825, coleopteron.] See Scudder, 1884, 269.

parietinus Bastian, 1865c, 118-119, pl. 10, figs. 79-80. ♀

cirratus Bastian, 1865c, 119, pl. 10, figs. 81-82. ♀

tenuis Bastian, 1865c, 119, pl. 10, figs. 83-84. ♀

velox Bastian, 1865c, 119, pl. 10, figs. 85-86. ♀

acuminatus Bastian, 1865c, 120, pl. 10, figs. 87-88. ♀

parvus Bastian, 1865c, 120, pl. 10, figs. 89-90. ♀

tritici Bastian, 1865c, 120, pl. 10, figs. 91-92. ♀

granulosus Bastian, 1865c, 120-121, pl. 10, figs. 93-94. ♀

fusiformis Bastian, 1865c, 121, pl. 10, figs. 95-96. ♀

rivalis (Dujardin, 1845) Bastian, 1865c, 121, as doubtful member of this genus.

pleskei Camerano, 1896d, 118-119.

1896: *Gordius*. 1897: *Parachordodes*.

Pleurorhynchus Rudolphi, 1801, 58. For *Pleurorinchus*.

Pleurorinchus Nau, 1787, 471-474, pl. 7. No specific name used. Type "*Ophiostoma sphærocephalus*." See de Blainville, 1828a, 540.

1801: *Pleurorhynchus* Rudolphi, 1801, 58. For *Pleurorinchus*.

[Not *Pleurorhynchus* Phill., 1836, mollusk.] See *Ascaris sphærocephala* Rudolphi, 1809a, 188-189.

plica Rudolphi, 1819a, 14, 222.

1819: *Trichosoma*. 1845: *Calodium*.

polycephalus Stiebel, 1817, 174-179, pl. 3, figs. 2-5.

1817: *Dyacanthos* (type).

Polydelphis Dujardin, 1845a, 151, 221-222. *Ascaris anoura* Dujardin, 1845a, 221-222, only species, hence type. A subgenus of *Ascaris*.

Polygordius Schneider, 1868, Feb., 51-60. Type apparently "*P. lacteus*."

"*Rhampogordius lacteus* Rathke" of Schneider, 1866, 326, misdetermined;
= "*Polygordius lacteus*," 1868, 52-56. Apparently type; description much more complete.

Rhampogordius purpureus Schneider, 1866, 326; = *Polygordius purpureus*, 1868, 56-57. Only few specimens, hence description incomplete.

polygyrus Dujardin, 1845a, 116-117.

1845: *Strongylus*. 1861: *Metastrongylus*.

Polyporus Gruby, 1840. [Not accessible to us.]

[Not *Polypora* M'Coy, 1844, pol.; Mosel, 1876, cœlenterate.]

Potamonema von Linstow, 1878, 349. For *Potamonema* Leidy.

Potamonema Leidy, 1855, Dec., 144. Type species ? *P. vacillatum*.

vacillatum Leidy, 1855, 144. Probably only ♀ observed. Abundant.

marinum Leidy, 1855, 144. Probably only ♀ observed.

posthelica Molin, 1860, 926-927.

1860: *Spiroptera*. 1861: *Cheilospirura*.

Potamonema Leidy, 1856, 49. *P. nitidum* Leidy, 1856, 49, only species, hence type.
præcinctus Dujardin, 1845a, 282.

1845: *Stelmus* (type). 1892: *Dacnitis*. [?]: *Heterakis*.

pratensis de Man, 1880, 22.

1880: *Ethmolaimus* (type).

primitivus de Man, 1880, 2-3.

1880: *Alaimus* (type).

prinzi Marion, 1870, 33-34, pl. J, fig. 2.

1870: *Necticonema* (type).

Prionoderma Rudolphi, 1810a, 254-256. *P. ascaroides* (Gœze, 1782) Rudolphi, 1810a, 254-256, pl. 12, fig. 3, only species, hence type.

prismaticus Villot, 1874, Jan., 58.

1874: *Gordius*. 1897: *Parachordodes*.

Prismatolaimus de Man, 1880, 31-33. Type species *P. intermedius*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.

Monhystera intermedia Buetschli, 1873a, 67-68, pl. 6, figs. 33, a-b.

dolichurus de Man, 1880, 32-33.

probolurus Railliet, 1896, 542.

1896: *Strongylus*. 1905: *Trichostrongylus*.

Proboscidea "Bruguière, 1791, 96." Our copy [MS.] gives, 90, "Proboscide."

[Not *Proboscidea* Les., 18—, worm; *Proboscidea* Latreille, 1809, diptera, supergeneric; *Proboscidea* Ill., 1811, mammal, supergeneric; *Proboscidea* Spix, 1823, mammal; *Proboscidea* Schmidt, 1832, mollusk; *Proboscidea* Trosch., 1848, mollusk; *Proboscidia* Bory, 1824, rotifer.]

According to Scudder (1882, 262), and Sherborn (1902, 777), this genus was proposed in 1791 by Bruguière. Cuvier (1798a, 637-638) mentions it, but does not give any species in connection with it. Lamarck (1801, 340) gives only *Proboscidea bifida* (Mueller); = *Ascaris bifida* Mueller [see Fabricius, 1780a]. Rudolphi (1801) was apparently not acquainted with the fact that *Proboscidea* had been proposed. Bosc (1802a, 43-45) attributes *Proboscidea* to Bruguière, and mentions the following species:

bifida (Fabricius) [= *Ascaris bifida* Fabricius, 1780a; = *Proboscidea bifida* (Fabricius) Lamarck, 1801; = *Ophiostoma bifidum* (Fabricius) Zeder, 1803a].

rajæ (Mueller, 1776) [sub *Ophiostoma* by Rudolphi, 1801, 48; to *Fusaria* and *Ophiostoma* by Zeder, 1803a, 124, 128; eliminated from *Ophiostoma* as doubtful by Rudolphi, 1810a, 270].

pluronectis Mueller, 1776 [renamed *Echinorhynchus platessoidæ* Gmelin, 1790a; doubtful species in Rudolphi, 1809a, 310].

gadi (Mueller, 1776) [= *Ascaris gadi* Mueller, 1776; = *A. clavata* Rudolphi, 1809a, 183].

versipellis (Fabricius, 1780) [= *Echinorhynchus acus*, according to Rudolphi, 1809a, 279].

rubra.

Proboscidea "Bruguère"—Continued.

alca (Mueller, 1776) [= *Ascaris alca* Mueller, 1776; to *Echinorhynchus* by Zeder, 1803a, 161; a doubtful species, according to Rudolphi, 1809a, 306].

The type species is in doubt. Lamarck (1801) might perhaps be interpreted as having designated *Ascaris bifida* as such.

profundi Bastian, 1865c, 159, pl. 13, figs. 198–200.

1865: *Comesoma*.

profundissima von Linstow, 1888, 11–12, pl. 2, figs. 8–10.

1888: *Prothelmins* (type).

Proleptus Dujardin, 1845a, 42, 105. Type species *P. acutus*, see p. 30.

[Not *Prolepta* Walk., 1851, hemipteron.]

acutus Dujardin, 1845a, 105. ♂ Only positive species, hence type.

?*obtusus* Dujardin, 1845a, 105. ♂

Prosthecosacter, see *Prosthecosacter*.

Prosthecosacter Diesing, 1851a, 82, 322–325. Type species by present designation *P. minor*, see p. 47.

1859: *Prosthecosacter* Gervais & van Beneden, 1859b, 117. Misprint.

inflexus (Rudolphi, 1809a, 227–228 p. p.) Diesing, 1851a, 323. ♂ ♀ Includes

Pseudalius filum Dujardin, 1845a, type of *Pseudalius*.

minor (Kuhn, 1829) Diesing, 1851a, 323–324. ♂ ♀ Includes *Stenurus inflexus* Dujardin, 1845a, 226; see *Stenurus*.

convolutus (Kuhn, 1829) Diesing, 1851a, 324. ♂ ♀

alatus (R. Leuckart, 1848) Diesing, 1851a, 324–325. ♂ ♀ Includes *Strongylus* (*Pharurus*) *alatus*, type of *Pharurus*, 1848.

proteus Pallas, 1766, p. 417, and Mueller, 1773, 45. See also *chaos* and *protheus*.

1766: *Volvox*. 1773: *Vibrio*. 1878: *Amæba*.

Prothelmins von Linstow, 1888, 11–12. *P. profundissima* von Linstow, 1888, 11–12, pl. 2, figs. 8–10, only species, hence type.

protheus Linnaeus, 1767, 1326; equals *chaos*, 1758, renamed.

[1758: *Volvox*.] 1767: *Chaos*.

protognostus Balsamo-Crivelli, 1843b, 188.

?1840: [?]. 1843: *Autoplectus* (type).

psammophilus de Man, 1880, 29.

1880: *Choanolaimus* (type).

Pseudalius Dujardin, 1845a, 106, 134–135. *P. filum* Dujardin, including *Strongylus major* Raspail, 1829, only species, hence type.

Pseudoechinorhynchus Gæze, 1782a, 41, 138–139; Luehe (1904, 250, 335) has apparently taken *Ps. sp.* Gæze, 1782a, 138–139, pl. 9b, fig. 12 (= ? *Cysticercus fasciolaris*), as type species. We have our misgivings, however, whether this is altogether in harmony with Gæze (1782a, 41), who distinctly says: "*Pseudoechinorhynchus* (*Tenia hæruca* Pallas)." See also *Hæruca*.

Pseudomermis Zykoff, 1902, 61–64, pl. 1. [Not accessible to us.]

Pseudonymus Diesing, 1857a, 10. *P. spirotheca* (Györy, 1856) Diesing, 1857a, 9–10, only species, hence type.

1861: *Ptychocephalus* Diesing, 1861; type species *spirotheca*.

1878: *Helicotrrix* Galeb, 1878b; type species *spirotheca*.

Pseudorhabdites Perroncito, 1881, Dec. 28, 499–519, pl. 19, figs. 1–8. *Anguillula stercoralis* Bavay, 1876a, only species, hence type.

Pterocephalus von Linstow, 1899, 12–13. *P. viviparus* von Linstow, 1899, 12–13, pl. 2, figs. 22–24, 26–27; pl. 4, fig. 41, only species, hence type.

[Not *Pterocephalus* Schneider, 1887, protozoon; *Pterocephala* Swains., 1839, fish; *Pterocephalia* Röm., 1852, crustacean.]

Pterygodermatites Wedl, 1861, 464–466. *P. plagiotoma* Wedl, 1861, 464–466, pl. 1, figs. 5–11, only species, hence type.

- Ptychocephalus* Diesing, 1861a, 614, 637-638. *P. spirotheca* (Györy, 1856) Diesing, 1861a, 638, only species, hence type. See *Helicotherix* and *Pseudonymus*.
[Not *Ptychocephalus* Agassiz, 1843, fish.]
- pulchrum* Molin, 1857, 223, figs. 13-15.
1857: *Gongylonema*.
- pulmonalis* Gmelin, 1790a, 3035.
1790: *Ascaris*. [1801: *Liorhynchus*.] 1802: *Ascaris*. [1883: *Rhabdonema* (type).]
- punctata* Eberth, 1863a, 20, pl. 2, figs. 5-7.
1863: *Phanoglene*. 1865: *Leptosomatum*.
- punctatus* Bastian, 1865c, 164, pl. 13, figs. 217-218.
1865: *Cyatholaimus*.
- purpurea* Cobb, 1894c, Apr. 13, 417-419, figs. 12, i-iv.
1894: *Chromagaster* (type).
- purpureus* Schneider, 1866, 326.
1866: *Rhamphogordius*. 1868: *Polygordius*.
- pustulosus* Baird, 1853a, 37.
1853: *Gordius*. 1897: *Parachordodes*.
- pyri* Bastian, 1865c, 123-124, pl. 10, figs. 103, a-c.
1865: *Aphelenchus*.
- quadricostata* Molin, 1860, 927.
1860: *Spiroptera*. 1861: *Cheilospirura*.
- quadridentatum* Molin, 1861, 475, pl. 3, fig. 2.
1861: *Diploodon*.
- quadridentatus* Molin, 1858, 155.
1858: *Acanthocheilus* (type).
- quadrilabiatum* Molin, 1858, 417.
1858: *Filaria*. 1861: *Tetracheilonema* (type).
- quadriloba* Rudolphi, 1819a, 25, 241-242.
1819: *Spiroptera*. 1845: *Dispharagus*.
- quadrispina* Diesing, 1851a, 271-272. Includes *F. martis* Gmelin, 1790a.
1851: *Filaria* (type, ~~see also attenuata Rudolphi, 1883a~~).
- radiatus* Rudolphi, 1803a, 13-15.
1803: *Strongylus*. 1885: *Uncinaria*. 1900: *Strongylatus*.
- rajæ* Mueller, 1776, 214.
1776: *Ascaris*. [1801: *Ophiostoma*.] 1803: *Ophiostoma*. [?]: *Proboscidea*.
- Ramphogordius* Rathke, 1843, 237-238. *R. lacteus* Rathke, 1843, 238, pl. 12, fig. 16, only species, hence type.
1846: *Rhamphogordius* Agassiz, 1846, 320, 322.
- rapax* Cobb, 1894c, Apr. 13, 393-394, figs. 5, i-iv.
1894: *Demonema* (type).
- raphælis* Camerano, 1893c, 213-215, fig. 1.
1893: *Gordius*. 1897: *Parachordodes*.
- rectum* von Linstow, 1899, 19-20, pl. 5, fig. 56.
1899: *Oxyinema* (type).
- redivivum* Linnaeus, 1767, 1326 [confined to *glutinis* by Mueller, 1783, 162; see also *Anguillula* Mueller, 1773, 41].
1767: *Chaos*. [1783: *Vibrio*.] [1786: *Anguillula* (type).]
- reflexa* Zeder, 1800a, 33-36, pl. 4, fig. 7; in part.
1800: *Fusaria*. [1845: *Ascaris* (*Ascaridia*) *inflexa* sub.] [1845: *Heterakis vesicularis* sub (type).]
- renale* Gøze, 1782a, 73.
[1782: *Ascaris renales*.] [1802: *Diectophyme* (type).] [1851: *Eustrongylus* (type).] 1901: *Diectophyme*.

renardi Lindemann, 1865, 495, pl. 12, figs. 1-6.

1865: *Paradoxites* (type).

reticulata Diesing in Hermann, 1841b, 200.

1841: *Onchocerca* (type).

reticulata Schlotthauber, 1860, 126.

1860: *Piguris* (type).

retortaeformis Zeder, 1800a, 75-77.

1800: *Strongylus*. 1905: *Trichostrongylus* (type).

retusa Rudolphi, 1819a, 30, 258.

1819: *Physaloptera*.

revoluta Rudolphi, 1819a, 26, 247.

[1811: *Acuaria*.] 1819: *Spiroptera*.

Rhabditis Dujardin, 1845a, 230, 239-243, 653. Type species *R. terricola*, designated by Bastian, 1865c, or *R. glutinis* type by inclusion. See discussion, p. 45.

1845: *Tribactis* Dujardin, 1845a, 3, 653. Renamed *Rhabditis*.

[Not *Rhabdites* Haan, 1825, mollusk.]

terricola Dujardin, 1845a, 240-241. ♀ To *Angiostomum* by Diesing, 1851a, 139; returned to *Rhabditis* as type by Bastian, 1865c; retained here by Railliet, 1893a, with *Pelodera teres* as synonym.

aceti (Mueller, 1783) Dujardin, 1845a, 242. ♂ ♀ To *Anguillula* by Diesing, 1851a, 129; designated type of "*Anguillula* Ehrenberg," 1828a, by Bastian [but not one of the original species of "*Anguillula* Hemprich & Ehrenberg, 1828a, new genus"]; to *Leptodera* by Schneider, 1866; generally retained as an *Anguillula* by most of the recent authors.

tritici ([Steinbuch, 1799] Bauer, 1823) Dujardin, 1845a, 243, ♀ including *Vibrio anguillula* γ Mueller, and *Vibrio agrostis* Steinbuch, 1799, 233, and *Vibrio tritici* Bauer, 1823, 1. To *Anguillula* by Diesing, 1851a; to *Anguillulina* by Gervais & van Beneden, 1859b; to *Tylenchus* by Bastian, 1865c; to *Anguillula* by Schneider, 1866; to *Tylenchus* by Bastian, 1865c; to *Anguillulina*, possibly as type, by Railliet, 1893a, 553.

glutinis (Mueller, 1783) Dujardin, 1845a, 243, ♀ including *Vibrio anguillula* β *glutinus* Mueller and *Vibrio glutinis* Dugès, 1826a, 225. Equals *redivivum* Linnaeus, 1767, type of *Anguillula*, 1786, not 1828. To *Anguillula* by Diesing, 1851a, and Bastian, 1865c; to *Leptodera* by Schneider, 1866, 160.

For discussion of this case, see p. 45.

Rhabdogaster Metschnikoff, 1867, Aug. 26, 542-543. *R. cygnoides* Metschnikoff, 1867, 542-543, pl. 31, figs. 9-11, only species, hence type.

[Not *Rhabdogaster* Loew., 1858, dipteron.]

Rhabdolaimus de Man, 1880, 59-61. Type species *R. terrestris*, designated in letter from de Man to Stiles, dated Nov. 30, 1903.

aquaticus de Man, 1880, 60. ♀

terrestris de Man, 1880, 60-61. ♂ ♀ "Sehr häufig."

Rhabdonema Leuckart, 1883, 89. *R. nigrorenosum* (Göze, 1800) Leuckart, 1883, 89, only species, hence type.

[Not *Rhabdonema* Kuetzing, 1844, polygastrica; not accessible to us.]

Rhabdonema Perroncito, 1886. [Not accessible to us.]

Rhabdotoderma Marion, 1870, 31-32. *R. morstatti* Marion, 1870, 31-32, pl. J, fig. 1, only species, hence type.

[Not *Rhabdotoderma* Reis, 1888, fish.]

Rhamphogordius Agassiz, 1846, 320, 322. For *Ramphogordius*.

Rhigonema Cobb, 1898a, Mar., 311, figs. 29, i-iv. *R. brevicollis* Cobb, 1898a, 311, figs. 29, i-iv, only species, hence type.

rhodesii Desmarests, 1828a, 79-81.

[1819: *Thelazia* (type).] 1828: *Thelazius* (type).

Rhytis Mayer, 1835, 67-72. *R. paradoxa* Mayer, 1835, 67-72, figs. 1-3, only species, hence type.

[Not *Rhytis* Zeder, 1803, worm.]

richtersi Jägerskiöld, 1905, Feb. 28, 557-561, 1 fig.

1905: *Bumonema* (type).

Rictularia Frælich, 1802a, 7-13, pl. 1, figs. 1-3. *R. cristata* Frælich, only species, hence type.

1845: *Laphyctes* Dujardin, 1845a, 3, 653.

rigida von Siebold, 1836, 33.

1836: *Filaria*. 1891: *Allantonema*. 1892: *Bradynema* (type).

rigidus Leidy, 1850, 102.

1850: *Hystriognathus* (type).

rivalis Dujardin, 1845a, 235.

1845: *Enoplus*. 1865: *Plectus*.

rivicola Corti, 1902a, 113.

1902: *Hydromermis* (type).

rivularis Bastian, 1865c, 97-98, pl. 9, figs. 3-4.

1865: *Monhystera*.

robusta Bastian, 1865c, 166, pl. 13, figs. 226-227.

1865: *Spilophora*. [1886: *Halichoanolaimus* (type).] 1888: *Halichoanolaimus* (type).

robusta van Beneden, 1871a, 18, 19, pl. 3, figs. 2-7.

1871: *Coronilla* (? type).

robustum Giles, 1892b, 26-27, 29, 30, figs. 1-5.

1892: *Sclerostomum*. 1900: *Triodontus*. [1902: *Esophagodontus* (type).] 1903: *Esophagodontus*.

robustus Diesing, 1838a, 189, nomen nudum; 1839a, 222-225, pl. 14, figs. 1-7.

1839: *Cheiracanthus* (type).

rosea Kœlliker, 1845b, 88.

1845: *Lineola*.

rotundatum Linstow, 1903, 117-119, figs. 16-20.

1903: *Lissonema* (type).

rubra Leidy, 1856, 56.

1856: *Filaria*. 1861: *Dicheilonema*.

rude Rudolphi, 1810a, 258-261, pl. 12, fig. 5.

1810: *Dicerus* (type). 1810: *Ditrachycerus* (type).

Sabatieria de Rouville, 1903, 11. Dec., 1529. *S. cettensis* de Rouville, 1903, 11. Dec., 1529, only species, hence type.

sabelloides Bastian, 1865c, 169-170, pl. 13, figs. 245-246.

1865: *Chromadora*.

sagax zur Strassen, 1904, 302-346, figs. a, d, g, j, pl. 15, fig. 5.

1904: *Anthraconema*.

salaris Gmelin, 1790a, 3052.

1782: *Cucullanus*. 1790: *Cucullanus lacustris* sub. 1800: *Capsularia*. [1802: to *Ascaris* by Rudolphi, 1802.]

salsu Bastian, 1865c, 116, pl. 9, figs. 18-19.

1865: *Tripyla*.

Schizoeilonema Diesing, 1861a, 621, 710. Renamed *Tricheilonema* Diesing, 1861a, 710, hence type *Tricheilonema megalochilum* (Diesing, 1851) Diesing, 1861a, 711.

Sclerostoma Rudolphi, 1809a, 35. Type species by inclusion *Strongylus equinus*. See *Strongylus* Mueller, 1780.

[Not *Sclerostomus* Burmeister, 1847, coleopteron.]

Sclerostoma Rudolphi—Continued.

- Sclerostoma* was based upon two species, *Strongylus equinus* Mueller, and *Strongylus dentatus* Rudolphi, 1803. But *Strongylus equinus* is type of *Strongylus*, hence *Sclerostoma* takes the same type and becomes synonym of *Strongylus*. De Blainville (1828a, 544–545) accepted Rudolphi's subgenus as genus, with the same two species.
- Sclerostomum* Dujardin, 1845a, 3, 244, 254–260, 263. For *Sclerostoma*; hence type species *Strongylus equinus*.
- Sclerotríchum* Rudolphi, 1819a, 223. Only species, hence type *Tenia spirillum* Pallas, 1781 = *Trichocephalus lacertæ* Gmelin, 1790a = *Mastigodes lacertæ* (Gmelin) Zeder, 1803a = *Trichocephalus echinatus* Rudolphi, 1809a = *Mastigodes spirillum* (Pallas) Blainville, 1828 = *Sclerotríchum echinatum* (Rudolphi) Dujardin, 1845a.
- Sclerostomum* Sonsino, 1878, 613. Misprint for *Sclerostomum*.
- scoleciformis* Diesing, 1851a, 208.
1851: *Aspidocephalus* (type).
- scutata* Mueller, 1869, 127–129; *scutata æsophagea boris* Mueller, 1869, 127–129, poly-nomial, later (? date) used as a binomial.
1869: *Spiroptera*. 1892: *Myzomimus* (type).
- semiammatum* Molin, 1861, 442. Includes *Liorhynchus vulpis* Dujardin, 1845a, 283.
1861: *Crenosoma*.
- semicircularis* Molin, 1861, 464–467, 469–470, pl. 2, figs. 3–4.
1861: *Monodontus* (type).
- semiteres* Zeder, 1803a, 61. See also *Hamularia nodulosa* and *Trichosoma longicolle*.
1803: *Capillaria*.
- serpentulus* Mueller, “1773, 42.”
1773: *Vibrio*. 1828: *Amblyura* (? type).
- serpicula* Molin, 1858, 385.
1858: *Filaria*. 1861: *Solenonema*.
- serratus* Looss, 1900, 191.
1900: *Triodontus* (type). 1902: *Triodontophorus* (type).
- setifera* Cobb, 1898a, 312, figs. 30, i–v.
1898: *Zoniolaimus* (type).
- sexalata* Molin, 1859, 957–958.
1859: *Spiroptera*. 1861: *Physocephalus* (type).
- sieboldii* Kœlliker, 1845b, 88.
1845: *Lineola* (probably type).
- sillicolla* van Beneden, 1871a, 6.
1871: *Coronilla*.
- Simondsia* Cobbold, 1864b, 79. *S. paradora* Cobbold, 1864b, 79, only species, hence type.
- simplex* Rudolphi, 1809a, 170.
1809: *Ascaris*. 1845: *Ascaris* (*Anisakis*).
- simplex* Cobb, 1894c, Apr. 13, 391–392, figs. 4, i–iv.
1894: *Pelagonema* (type).
- Siphonolaimus* de Man, 1893, 99–102. *S. niger* de Man, 1893, 100–102, pl. 6, fig. 8, only species, hence type.
- sipunculoides* Acharius, 1780, 49–55, pl. 2, figs. 1–9.
1780: *Acanthrus* (type).
- soleæ* Rudolphi, 1819a, 22.
1819: *Cucullanus*. [1845: *Dacnitis esuriens* sub.]
- Solenolaimus* Cobb, 1894c, Apr. 13, 419–420. *S. obtusus* Cobb, 1894c, 419–420, figs. 13, i–iv, only species, hence type.

- Solenonema* Diesing, 1861a, Dec. 6, 620, 704-705. Type species?.
- aequale* (Molin, 1858) Diesing, 1861a, 704. ♂ ♀ Host *Myrmecophaga jubata*.
- serpicula* (Molin, 1858) Diesing, 1861a, 705. ♂ ♀ Host *Phyllostoma brevicaudum*.
- striata* (Molin, 1858) Diesing, 1861a, 705. ♂ ♀ Hosts *Felis concolor*, *F. macroura*.
- spectabile* Marion, 1870, 20-21, pl. E, fig. 1.
- 1870: *Eurystoma* (type).
- sphacrocephala* Rudolphi, 1809a, 188-189.
- [1787: *Pleurorinchus* (type).] 1809: *Ascaris*. 1819: *Ophiostoma*. 1845: *Dacnitis* (? type, see also *esuriens*).
- Sphaerolaimus* Bastian, 1865c, 95, 157-158. *S. hirsutus* Bastian, 1865c, 157-158, pl. 13, figs. 192-194, only species, hence type.
- Sphaerularia* Dufour, 1837a, 9. *S. bombi* Dufour, 1837a, 9, pl. 1 A, fig. 3, only species, hence type.
- Spiliphora* Bastian, 1865c, 165-167, 178. Corrected to *Spilophora* Bastian, 1865c, 95, 178. Type by designation, page precedence, and elimination *S. elegans*.
- elegans* Bastian, 1865c, 165-166, pl. 13, figs. 221-222.
- inaequalis* Bastian, 1865c, 166, pl. 13, figs. 223-225. Type of *Hypodontolaimus* de Man, 1888.
- robusta* Bastian, 1865c, 166, pl. 13, figs. 226-227. Type of *Halichoanolaimus* de Man, 1888.
- costata* Bastian, 1865c, 166-167, pl. 13, figs. 228-229. To *Monoposthia*, 1889, as type.
- Spiliphora* Bastian, 1865c. See Scudder, 1884, 298.
- Spilophora* Bastian, 1865c, 95, 178. Type by elimination *Spilophora elegans*. See *Spiliphora*.
- [Not *Spilophora* Bohem., 1850, coleopteron; *Spilophorus* Lac., 1856, coleopteron.]
- spinicauda* Diesing, 1851a, 188; renamed *acanthura* Diesing, 1851a, [591].
- 1851: *Ascaris*. [1861: *Pharyngodon* (type).]
- Spinifer* Linstow, 1901, Apr. 20, 418-419. *S. fülleborni* Linstow, 1901, 418-419, figs. A-E., only species, hence type. Type locality Nyassa Sea.
- [Not *Spinifer* Rafinesque, 1831, mollusk.]
- spinigerum* Owen, 1836, 123-126.
- 1836: *Gnathostoma* (type).
- Spinitectus* Fourment, 1884a, 1-8. *S. oriflagellis* Fourment, 1884a, 1-8, pl. 16, figs. 1-11, only species, hence type.
- spinosa* Buetschli, 1874b, 273, pl. 5, figs. 20, a-b.
- 1874: *Anoplostoma*. 1889: *Axonolaimus* (type).
- spinulosus* Diesing, 1839a, 227.
- 1839: *Lecanocephalus* (type).
- spira* Diesing, 1851a, 34.
- 1851: *Echinorhynchus*. 1892: *Gigantorhynchus*.
- Spira* Bastian, 1865c, 95, 159-161. Type species *S. parasitifera* designated by Bastian in letter to Stiles, dated March 22, 1904.
- [Not *Spira* Brown, 1838, mollusk.]
- parasitifera* Bastian, 1865c, 159-160, pl. 13, figs. 201-203. ♂ ♀
- laevis* Bastian, 1865c, 160, pl. 13, figs. 204-206. ♂ ♀
- tenuicaudata* Bastian, 1865c, 160-161, pl. 13, figs. 207-209. ♂ ♀ Probably belongs to some other genus. See Bastian, 1865c, 160, and de Man, 1888, 15.
- spirale* Molin, 1857, 222, figs. 10-12.
- 1857: *Gongylonema*.

"*spiralis* Pallas" of Grundler's Bremser, 1824a, 147-148.

[1819: *Sclerotrimum (echinatus)*] type. 1824: *Tenia*.

spiralis Owen, 1835, 315-324, pl. 41, figs. 1-9.

1835: *Trichina* (type). 1895: *Trichinella* (type).

spiralis Diesing, 1851a, 231. Includes *Spiroptera obvelata* Creplin.

1851: *Histiocephalus*. [1861: *Cosmoecephalus alatus*.]

spiralis Molin, 1860, 947.

1860: *Spiroptera*. 1879: *Filaria*. 1897: *Oxyspirura*.

spirillum Pallas, 1781, 111-112.

1781: *Tenia*. [1782: *Trichocephalos* [no specific name].] 1790: *Trichocephalus (lacertae)*. [1803: *Mastigodes (lacertae)*.] [1809: *Trichocephalus (echinatus)*.] [1819: *Sclerotrimum (echinatus)*] type. 1828: *Mastigodes*. 1845: *Sclerotrimum* (type).

Spiromoura Leidy, 1856, Feb., 52-53. Type species? *S. gracile*.

1861: *Spirura* Diesing, 1861, for *Spiromoura* Leidy, not *Spirura* E. Blanchard, 1849.

gracile Leidy, 1856, 52-53. ♂ ♀

affine Leidy, 1856, 53. ♂ ♀

Spiroptera Rudolphi, 1819a, 22-29, 235-255. *Acuaria* and *Anthuris* renamed, hence same type, *Spiroptera anthuris*. For discussion of this very complicated case, see p. 48.

Spiroptera van Beneden, "1858a, 270;" 1861a, 270-271. *S. coronata*, only species, hence type.

Spiroptera Rudolphi, 1819a, 237. Misprint for *Spiroptera*.

spirotheca Györy, 1856, 327-332, figs. 1-15.

1856: *Oxyuris*. 1857: *Pseudonymus* (type). 1859: *Ascaris*. 1861: *Ptychocephalus* (type). 1878: *Oxyuris (Helicothrix [type])*.

Spiroxys Schneider, 1866, 29. Corrected to *Spiroxys* Schneider, 1866, 125.

Spiroxys Schneider, 1866, 125-126. *S. contorta* (Rudolphi, 1819) Schneider, 1866, 125; = *Spiroptera contorta* Rudolphi, 1819a, 25, 242-243, only species, hence type.

1866: *Spiroxys* Schneider, 1866, 29. Corrected to *Spiroxys*.

Spirura E. Blanchard, 1849a, 161-165. Type species probably *S. talpæ*.

[Not *Spirura* Diesing, 1861a.]

talpæ (Gmelin, 1790a) E. Blanchard, 1849a, 162-164. ♂ ♀ Host *Talpa europæa*. See also *Spiroptera strumosa*. To *Filaria* by Schneider, 1866.

megastoma (Rudolphi, 1819) E. Blanchard, 1849a, 164-165. ♂ ♀ Host *Equus caballus*. To *Filaria* by Schneider, 1866.

Under ordinary circumstances it would be better to select *megastoma* as type, on account of its host, but Blanchard seems to have based his genus more upon *talpæ* than upon *megastoma*; on this account, his original intentions will probably be better carried out by taking *talpæ* as type.

Spirura Diesing, 1861a, Dec. 6, 681-682. *Spiromoura* Leidy, 1856, renamed, hence takes same species as type.

gracilis (Leidy, 1856) Diesing, 1861a, 681-682.

affinis (Leidy, 1856) Diesing, 1861a, 682.

splenæcum Dujardin, 1843a, 332-338, pl. 14, figs. A, 1-10.

1843: *Trichosomum*. 1845: *Calodium*.

squali Dujardin, 1845a, 272.

1845: *Dacnitis*.

stagnalis Dujardin, 1845a, 231, pl. 3, fig. C.

1845: *Dorylaimus* (probably type).

stagnalis Bastian, 1865c, 97, pl. 9, figs. 9-11.

1865: *Monhystera* (type).

- Stelmus* Dujardin, 1845a, 281–282. *S. præcinctus* Dujardin, 1845a, 282, only species, hence type.
- Stenodes* Dujardin, 1845a, 244, 264–265. *S. acus* Dujardin, 1845a, 264–265, only species, hence type.
[Not *Stenodes* Guen., 1845, lepidopteron.]
- stenodon* Dujardin, 1845a, 234.
1845: *Enoplus*.
- Stenolaimus* Marion, 1870, 16–18. Type by original designation *S. lepturus*.
[Not *Stenolemus* Sign., 1858, hemipteron.]
- lepturus* Marion, 1870, 16–17, pl. C, fig. 1 (type).
macrostoma Marion, 1870, 17–18, pl. C, fig. 2.
- Stenurus* Dujardin, 1845a, 244, 265–267. “*Stenurus inflexus* (Rudolphi, 1809),” only species, hence type; = *Strongylus inflexus* Rudolphi, 1809, 227, includes *Strongylus minor* Raspail, 1829, 244, pls. 7–8. See also *Pseudalius* and *Prosthecosacter*.
[Not *Stenura* Dejean, 1834, coleopteron; *Stenuris* Kirby, 1837, coleopteron.]
- Steongylus* Giles, 1892d, 48. Misprint for *Strongylus*.
- Stephanurus* Diesing, 1839a, 232–233. *S. dentatus* Diesing, 1839a, 232–233, pl. 15, figs. 9–19, only species, hence type. See *Strongylus*.
- stercoralis* Bavay, 1876a, Oct. 9, 694–696.
1876: *Anguillula*. [1879: *Strongyloides* (type).] [1879: *Strongiloides* (type).]
1881: *Pseudorhabditis* (type).
- Stomachida* Pereboom, 1780, 1–24. *S. vermis* Pereboom, 1780, 1–24, figs. 1–4; = *Ascaris lumbricoides*, only species, hence type. See *Ascaris*.
- Streptogaster* Cobb, 1898a, March, 320. *S. papillatus* Cobb, 1898a, 320, fig. 45, i–iv. only species, hence type.
- Streptostoma* Leidy, 1849, Oct., 230–231. *S. agile* Leidy, 1849, 230–231, only species, hence type.
1853: *Streptostomum* Leidy, 1853, 45–46.
Galeb (1878b, 289) makes *Oxyuris diesingi* the type of *Streptostomum*.
[Not *Streptotoma* Guér., 1862, coleopteron.]
- Streptostomum* Leidy, 1853, Apr., 45–46. See *Streptostoma*.
- striata* Molin, 1858, 388–389.
1858: *Filaria*. 1861: *Solenonema*.
- striata* de Man, 1876, 117–119, pl. 6, fig. 15 a–d.
1876: *Tylopharynx* (type).
- striatipunctata* Marion, 1870, 35–36, pl. K, fig. 3.
1870: *Acanthopharynx*.
- striatocaudatus* de Man, 1888, 35–36, pl. 3, pl. 4, fig. 16.
1888: *Syringolaimus* (type).
- striatus* Zeder, 1800a, 83–85.
1800: *Strongylus*. 1861: *Crenosoma* (probably type).
- striatus* Bastian, 1865c, 125, pl. 10, figs. 107–108.
1865: *Cephalobus*.
- striatus* Bastian, 1865c, 164, pl. 13, figs. 219–220.
1865: *Cyatholaimus*.
- Strongiloides* Grassi, 1879a, 233. Type species *Anguillula intestinalis* = *A. stercoralis*.
See *Strongyloides*.
- Strongilus* Rudolphi, 1801, 54. Misprint for *Strongylus*.
- Strongylacantha* van Beneden, 1873b, 13–16. *S. glycirrhiza* van Beneden, 1873b, 13–16, pl. 1, figs. 1–7, only species, hence type.
- Strongylatus* Railliet, 1900, 15. May, 87. Probably lapsus for *Strongylus*. *Strongylatus radiatus* only species mentioned.

"Strongylinæ Erichson, 1843, coleopteron."

strongyloides Diesing, 1851a, 297; = *Strongylus galeatus* Rudolphi, 1819a, 648, renamed;
= *Sclerostoma galeatum* Dujardin, 1845a, 260.

[1819: *Strongylus galeatus*.] [1845: *Sclerostoma galeatum*.] 1851: *Diaphanocephalus* (? type).

strongyloides Schneider, 1860, 228, pl. 6, fig. 12.

1860: *Pelodytes* (type). 1866: *Pelodera* (type).

Strongyloides Grassi, 1879f, June, 497. *S. intestinalis* (Bavay, 1877) Grassi, 1879f, 497;
= *stercoralis*, only species, hence type.

1879: *Strongiloides* Grassi, 1879e, 233.

1881: *Pseudorhabditis* Perroncito, 1881, 499-519.

Strongyluris Mueller, 1894, July, 113, 116-117. *S. brevicaudata* Mueller, 1894, 113,
116-117, pl. 7, fig. 2, only species, hence type.

Strongylus Mueller, "1780, pl. 42, figs. 1-12;" 1784, 6-8. Type species *S. equinus*
Mueller.

1801: *Strongilus* Rudolphi, 1801, 54. Misprint.

1809: *Sclerostoma* Rudolphi, 1809a, 35. Type *Strongylus equinus* Mueller.

1845: *Sclerostomum* Dujardin, 1845a, 3. For *Sclerostoma*.

1878: *Sclerostomum* Sonsino, 1878, 613. Misprint for *Sclerostomum*.

1892: *Steongylus* Giles, 1892d, 48. Misprint for *Strongylus*.

[Not *Strongylus* Herbst, 1792, coleopteron; *Strongylus* for *Stroggulus* Motsch,
1845, coleopteron.]

strumosa Zeder, 1800a, 64-66. See also *Ascaris strumosa* Frœlich, 1791a, 82, and *Asca-*
ris talpæ Gmelin, 1790a.

1800: *Fusaria*. [1845: *Ascaris* (*Ascaridia*) *gibbosa* (sub).]

strumosus Rudolphi, 1802, 63-64.

1802: *Echinorhynchus*. 1904: *Corynosoma* (type).

strumosus Molin, 1861, 542.

1861: *Kalicephalus*.

stylosus von Linstow, 1883, 299, figs. 36-38.

1883: *Gordius*. 1897: *Paragordius*.

subcompressa Zeder, 1803a, 45.

1803: *Tentacularia*.

subtilis Looss, 1895, 161-169.

1895: *Strongylus*. 1905: *Trichostrongylus*.

subula Dujardin, 1845a, 73-74.

1845: *Dispharagus*.

subulata Eberth, 1863a, 21, pl. 2, figs. 9-10.

1863: *Phanoglene*. 1865: *Leptosomatum*.

subulatum Molin, 1861, 445-446, pl. 1, figs. 3-4. See *dentatus* Rudolphi, 1803a.

1861: (*Esophagostoma* (type)).

subulatus Molin, 1861, 543-544.

1861: *Kalicephalus*.

Subulura Molin, 1860, 332-333. *S. acutissima* Molin, 1860, 332-333, only species,
hence type.

sygmoidea Molin, 1860, 920.

1860: *Spiroptera*. 1897: *Oxyspirura*.

Symphlocostoma Bastian, 1865c, 94, 132-134. Type species *S. longicollis*, designated by
Bastian in letter to Stiles, dated March 22, 1904.

longicollis Bastian, 1865c, 133, pl. 11, figs. 119-122. ♂ ♀

tenuicollis (Eberth, 1863) Bastian, 1865c, 133. ♂ ♀

viripara Bastian, 1865c, 133-134, pl. 11, figs. 123-125, as doubtful member of
this genus. ♂ ♀

Symplocostoma Bastian—Continued.

ornata (Eberth, 1863) Bastian, 1865c, 134, as doubtful member of this genus.

♂ ♀

barbata (Carter, 1859) Bastian, 1865c, 134, as doubtful member of this genus.

♂ ♀

Syngamus Siebold, 1836, 105–116. *S. trachealis* Siebold, 1836, 105–116, pl. 3, figs. i–ii, only species, hence type.

Synœcnema Magalhães, 1905, Jan. 15, 314–318. *S. fragile* Magalhães, 1905, 314–318, figs. 4, 1–4, only species, hence type.

Symonchus Cobb, 1894c, Apr. 13, 411–413. Type *S. fasciculatus*, designated by Cobb in letter to Stiles, dated Dec. 15, 1903.

fasciculatus Cobb, 1894c, 411–413, figs. 10, i–vi. ♂ ♀

hirsutus Cobb, 1894c, 413. ♂

[Not *Synonychia* Chevrolat, 1833, coleopteron.]

Synplecta Leidy, 1851, 239–240. *S. pendula* Leidy, 1851, 240, only species, hence type.

Syringolaimus de Man, 1888, 34–36. *S. striatocaudatus* de Man, 1888, 35–36, pls. 3, 4, fig. 16, only species, hence type.

Tachygonetria Wedl, 1862, 471–472. *T. viripara* Wedl, 1862, 471–472, pl. 2, figs. 24–26, only species, hence type.

Tachyhodites Bastian, 1865c, 95, 155–156. Type species *T. natans*, designated by Bastian in letter to Stiles, dated March 22, 1904.

natans Bastian, 1865c, 155–156, pl. 13, figs. 182–184. ♂ ♀

parvus Bastian, 1865c, 156, pl. 13, figs. 185–186. ♀

tænioides Diesing, 1851a, 23.

1851: *Echinorhynchus*. 1892: *Gigantorhynchus*.

tænioides Lindemann, 1865, 496.

1865: *Paradozites*.

Tæniola Pallas, “1760, 52;” 1768, 289. [De *Hærucula* seu *Tæniola osculis obscuris*.]
See *Hærucula*.

talpæ Gmelin, 1790a, 3032. See also Schrank, 1790, 121.

1790: *Ascaris*. [1791: *Ascaris strumosa*.] [1803: *Fusaria convoluta*.] [1809: *Ascaris strumosa*.] [1819: *Spiroptera strumosa*.] 1849: *Spirura* (probably type).

Tanqua R. Blanchard, 1904, 15. May, 478. New name for *Ctenocephalus* von Linstow, 1904 [not Kol., 1857]. Hence type species *Tanqua tiara* (Linstow, 1879) Stiles & Hassall, 1905, 141.

1904: *Ctenocephalus* von Linstow, 1904, Feb., 12–13 of reprint [not Kol., 1857]. Type *Ct. tiara*.

1904: *Tanqua* R. Blanchard, 1904, 15. May, 478. New name for *Ctenocephalus* von Linstow, hence type *T. tiara*.

1904: *Tetradenos* von Linstow, 1904, Aug., 301. New name for *Ctenocephalus* von Linstow, 1904, hence type *Ct. tiara*.

tardus de Man, 1889, 8.

1889: *Camacolaimus* (type).

tardus de Man, 1893, 82–83, pl. 5, fig. 1.

1893: *Thalassoalaimus* (type).

Tentacularia Zeder, 1800a, 5; = *Hamularia* Treutler renamed, hence type *T. subcompressa*, 1803; = *H. lymphatica*.

[Not *Tentacularia* Bosc, 1797, worm.]

tentaculata Rudolphi, 1819a, 658.

1819: *Ascaris*. 1866: *Oxysona*.

tentaculatus Hemprich & Ehrenberg, 1828a.

1828: *Crossophorus*.

- tenuis* Dujardin, 1845a, 28-29. [Includes *Trichosoma columbæ* Rudolphi, 1819a.]
1845: *Calodium*.
- tenuis* Marion, 1870, 21, pl. E, fig. 2.
1870: *Eurystoma*.
- tenuicaudata* Bastian, 1865c, 160-161, pl. 13, figs. 207-209.
1865: *Spira*.
- tenuicollis* Rudolphi, 1819a, 30, 258-259.
1819: *Physaloptera*.
- tenuicollis* Eberth, 1863a, 41-42, pl. 4, fig. 16; pl. 5, figs. 1-2.
1863: *Enoplus*. 1865: *Symplocostoma*.
- tenuis* Dujardin, 1845a, 24-25.
1845: *Eucoleus*.
- tenuis* Dujardin, 1845a, 73.
1845: *Dispharagus*.
- tenuis* Bastian, 1865c, 119, pl. 10, figs. 83-84.
1865: *Plectus*.
- tenuis* von Linstow, 1876, 5-6, pl. 1, figs. 7-9.
1876: *Acanthophorus* (? type).
- tenuis* Cobb, 1894c, 420-421, figs. 14, i-iv.
1894: *Fimbria* (type). 1905: *Fimbrilla* (type).
- Teratocephalus* de Man, 1876, 137-139. *T. terrestris* (Buetschli, 1873) de Man, 1876, 138-139, pl. 7, fig. 25, only species, hence type.
- terdentatum* von Linstow, 1898, 470-471, pl. 35, figs. 12-14.
1898: *Amblyonema* (type).
- teres* Schneider, 1866, 153, pl. 10, fig. 8.
1866: *Pelodera*.
- terrestris* Linnæus, 1758a, 647-648.
1758: *Lumbricus* (type).
- terrestris* Buetschli, 1873a, 69, pl. 7, fig. 43.
1873: *Anguillula*. 1876: *Teratocephalus* (type).
- terrestris* de Man, 1880, 60-61.
1880: *Rhabdolaimus* (type).
- terricola* Dujardin, 1845a, 240-241.
1845: *Rhabditis* (type). 1851: *Angiostomum*.
- terricola* Bastian, 1865c, 127-128, pl. 10, figs. 115-116.
1865: *Tylenchus*.
- Terschellingia* de Man, 1888, 11-12. *T. communis* de Man, 1888, 12, pl. 1, fig. 7, only species, hence type.
- tetracanthus* Mehlis, 1831, 79.
1831: *Strongylus*. 1861: *Cyathostomum* (type). 1902: *Cylichnostomum* (type).
- Tetracheilonema* Diesing, 1861a, Dec. 6, 621, 711. *T. quadrilabiatum* (Molin, 1858) Diesing, 1861a, 711, only species, hence type.
- Tetradenos* Linstow, 1904, Aug., 301. *Ctenocephalus* Linstow, 1904, renamed. See *Tanqua*.
- Tetrameres* Creplin, 1846a, 130, 135, 142; = *Tropisurus* Diesing renamed, hence type species *Tropisurus paradoxus* Diesing, 1835.
[Not *Tetrameres* Schaufuss, 1877, coleopteron.]
- Thalassironus* de Man, 1889, 4-5. *T. britannicus* de Man, 1889, 4-5, only species, hence type.
- Thalassoalaimus* de Man, 1893, 81-83. *T. tardus* de Man, 1893, 82-83, pl. 5, fig. 1, only species, hence type.
- Thelandros* Wedl, 1862, 470-471. *T. alatus* Wedl, 1862, 470-471, pl. 2, figs. 20-22, only species, hence type.

Thelastoma Leidy, 1849, 231. *T. attenuatum* Leidy, 1849, 231, only species, hence type. See also *Aorurus*.

1853: *Thelastomum* Leidy, 1853, 46. For *Thelastoma*.

Thelastomum Leidy, 1853, Apr., 46. For *Thelastoma* Leidy, 1849.

Thelazia Bosc, 1819, 214–215. La Thélazie de Rhodes Bosc, 1819, 214–215, figs. 1–2 (from cattle); = *Thelazius rhodesii* Desmarests, 1828a, 79–81, only species, hence type. See also *Filaria lacrymalis* Gurlt, 1831.

1828: *Thelazius* Desmarests, 1828a, 79.

Thelazius Bosc, 1819, 498–499; = *Thelazia* Bosc, 1819.

rhodesii Desmarests, 1828a, 79–81.

Theristus Bastian, 1865c, 95, 156–157. Type by elimination *T. acer*.

acer Bastian, 1865c, 156–157, pl. 13, figs. 187–188. ♂ (Type.)

velox Bastian, 1865c, 157, pl. 13, figs. 189–191. ♀ [To *Monohystera* (*Penzancia* [type]) by de Man, 1889, 7.]

Thomina Dujardin, 1845a, 3, 22–23. *T. manica* Dujardin, 1845a, 22–23, only positive species, hence type.

manica Dujardin, 1845a, 22–23. ♂

tridens Dujardin, 1845a, 23. ♂ Given as doubtful.

Thoracostoma Marion, 1870, 25–30. Type species probably *T. echinodon*.

echinodon Marion, 1870, 26, pl. H, figs. 1–1k. [“de beaucoup la plus commune.”] ♂ ♀

dorylainus Marion, 1870, 27, pl. H, fig. 2. [“assez rare.”] ♂ ♀

montredonense Marion, 1870, 27–29, pl. I, figs. 1–1f. ♂ ♀

zola Marion, 1870, 29–30, pl. I, figs. 2–2e. ♂ ♀

tiara Linstow, 1879, 320, pl. 5, fig. 1.

1879: *Ascaris*. 1904: *Clenocephalus* (type). 1904: *Tanqua* (type). 1904:

Tetradenos (type).

tolosanus Dujardin, 1842a, 118; 1842e, 146–149.

1842: *Gordius*. 1897: *Parachordodes* (type).

trachealis Siebold, 1836, 105–116, pl. 3, figs. i–ii.

1836: *Syngamus* (type).

Trefusia de Man, 1893, 84–86. *T. longicauda* de Man, 1893, 85–86, pl. 5, fig. 3, only species, hence type.

triacanthus Diesing, 1853a, 35.

1853: *Cephalacanthus*.

Tribactis Dujardin, 1845a, 3, 653, renamed *Rhabditis* Dujardin, 1845a, 230, 239–246, 653. Hence same type species.

[Not *Tribactis* Billb., 1820, lepidopteron.]

Tricheilonema Diesing, 1861a, Dec. 6, 710–711. *T. megalochila* (Diesing, 1851) Diesing, 1861a, 711; = *Schizoeilonema* Diesing, 1861a, renamed, only species, hence type.

Tricheilostomi Diesing, 1851a, 264, 278–279. Subsection of *Cheilostomi* of *Filaria*. Only species *Filaria megalochila*. See *Tricheilonema*.

Trichina Owen, 1835, 315–324. *T. spiralis* Owen, 1835, 315–324, pl. 41, figs. 1–9, only species, hence type. See *Trichinella* Railliet.

[Not *Trichina* Meig., 1830, dipteran; *Trichina* Kirby, 1837, coleopteron; *Trichinia* Bisch., 18—, worm; *Trychina* Klug., coleopteron for *Trychine* Klug., coleopteron.]

Trichinella Railliet, 1895, 1303; = *Trichina* Owen renamed, hence type species *Trichinella spiralis*.

1835: *Trichina* Owen, 1835, 315–324. [Not *Trichina* Meig., 1830.]

1881: *Trichinus* Fraser, 1881a, 12 pp., 2 pls. For *Trichina*.

Trichinus Fraser, 1881a, 12 pp., 2 pls. For *Trichina*.

trichiura Linnaeus, 1767, 543; 1771, 543.

[1761: *Trichuris* (type).] 1767: *Ascaris*. [1782: type of *Trichocephalus* Goeze, 1782a, by inclusion.] [1790: type of *Trichocephalus* Gmelin, 1790a, by inclusion.] [1800: type of *Mastigodes* Zeder, 1800a, by inclusion.]

Trichnia Tyson, 1903, 1191. Misprint for *Trichina*, 1835.

trichocephala Schrank, "1796, 232." [Not accessible to us.]

1796: *Linguatula*. [1803: *Capillaria tumida* (type).] [1809: *Trichocephalus capillaria* sub.] [1819: *Trichosoma brevicolle* sub (type).]

Trichocephalis Goeze, 1782a, 119. See *Trichocephalos*.

Trichocephalos Goeze, 1782a, 40, 112-123; = *Trichuris* renamed, hence type *Trichuris trichiura*.

Trichocephalus Schrank, 1788, 4-5; Gmelin, 1790a, 3024, 3038-3039. For *Trichocephalos* Goeze, 1782a, hence type species *Trichuris trichiura*.

Trichoderma Greef, 1869a, 115-117. *T. oxycaudata* Greef, 1869a, 115-117, pl. 6, figs. 9-10, only species, hence type.

[Not *Trichoderma* Steph., 1835, coleopteron; Swains., 1839, fish; Nonfried, 1894, insect.]

Trichodes von Linstow, 1874, 271-286. *Trichosoma crassicauda* (Bellingham, 1845) von Linstow, 1874, 271-286, pl. 8, figs. 1-6, only species, hence type. See *Trichosomoides*.

[Not *Trichodes* Herbst, 1792, coleopteron; *Trichotis* Felder, 1874, lepidopteron; *Trichoda* Huebner, 1806, lepidopteron.]

Trichonema Cobbold, 1874h, Feb., 85-87. *T. arcuata* Cobbold, 1874h, 85-87, figs. a-g, only species, hence type.

[Not *Trichonema* Fromentel, 1875, protozoon; *Trichocnemus* Stål, 1873, hemipteron.]

Trichosoma Rudolphi, 1819a, 13-16, 219-223; = *Capillaria* Zeder, 1800a, renamed, hence type *T. brevicolle* equals *Capillaria anatis* (Schrank, 1790).

1839: *Trichosomum* Creplin, 1839a, 278.

[Not *Trichosoma* Boisds., 1834, lepidopteron; *Trichosoma* Swains., 1839, fish; *Trichosomus* Swains., 1839, fish; *Trichosomus* Chevrolat, 1881?, coleopteron (see Scudder, 1884, 341).]

Rudolphi deliberately renamed *Capillaria* and included both of Zeder's originals among his original species, namely, (1) *Trichosoma brevicolle* Rudolphi, 1819; = *Trichocephalus capillaris* Rudolphi, 1809, which included *Capillaria tumida* Zeder, 1803a, *Linguatula trichocephala* Schrank, 1797, 232, and *Trichocephalus anatis* Schrank, 1790; (2) *Trichosoma longicollis* Rudolphi, 1819a; = *Capillaria semiteres*, 1803. This latter species Rudolphi (1809a, 84) named *Hamularia nodulosa*, including as synonyms *Capillaria semiteres* Zeder, 1803a, *Linguatula unilinguis* Schrank, 1796, 231, *Filaria gallinae* Gmelin, 1790a, 3040, and "*Gordius gallinae* Goeze," 1782, of Rudolphi, 1809a.

Trichosomoides Railliet, 1895, 1302; = *Trichodes* renamed. Type species *Trichosomoides crassicauda* (Bellingham, 1845).

Trichosomum Creplin, 1839a, 278; = *Trichosoma* Rudolphi, renamed, hence type species *Capillaria anatis*.

Trichostrongylus Looss, 1905, 413-417. Type species *T. retortaeformis* (Zeder, 1800). *retortaeformis* (Zeder, 1800) Looss, 1905, 413, 417-418, pl. 1, figs. 1-3.

subtilis (Looss, 1895) Looss, 1905, 418-419, pl. 1, figs. 4-6, 8; pl. 2, fig. 7.

probolurus (Railliet, 1896) Looss, 1905, 419-421, pl. 2, figs. 9-11.

vitrinus Looss, 1905, 421, pl. 2, figs. 12-14.

instabilis (Railliet, 1893) Looss, 1905, 422.

trichiura Werner, 1782, 84. Misprint for *trichiura*.

- Trichuris* Röederer & Wagler, 1761, 10. Oct., 243; 1762, 41–42, 185–189, 193, pl. 3, figs. 4, a–b. *T. trichiura*, only species, hence type. Apparently no specific name was used by Röederer & Wagler. Also type by virtual tautonymy.
- 1782: *Trichocephalos* Goeze, 1782a; = *Trichuris* renamed, hence type species is *Trichuris trichiura*.
- 1790: *Trichocephalus* Gmelin, 1790a. For *Trichocephalos*.
- 1800: *Mastigodes* Zeder, 1800a; = *Trichuris* renamed, hence type species *Trichuris trichiura*.
- 1801: *Tricocephalus* Lamarck, 1801, 338. For *Trichocephalus*. Type *T. hominis* = *Trichuris trichiura*.
- [Not *Trichurus* Wagner, 1843; for *Trichosurus* Lesson, 1828, mammal; *Trichura* Huebn., 1816, lepidopteron; *Trichiurus* Linnæus, 1758, fish; *Trichiura* Steph., 1829, lepidopteron.]
- tricti* = *tritici*, misspelled. See Bastian, 1865c, 126.
- Tricocephalus* Lamarck, 1801, 338. For *Trichocephalus*. *T. hominis* is the only species mentioned.
- tricolor* Dujardin, 1845a, 290–291.
1845: *Hystrichis* (type).
- Tricoma* Cobb, 1894c, Apr. 13, 389–391. *T. cincta* Cobb, 1894c, 390–391, figs. 2–3, only species, hence type.
[Not *Tricomia* Walk., 1865, lepidopteron.]
- Tricontus* Dujardin, 1845a, 3, 653. Changed to *Enoplus* Dujardin, 1845a, 230, 233–235, 653. Type species ? *Enoplus tridentatus*. See *Enoplus*.
- tricuspidata* Dufour, 1828d, 223–224, pl. 12 C, fig. 1.
1828: *Filaria*. 1897: *Paragordius*.
- tricuspis* Leuckart, 1865, 227.
1865: *Ollulanus* (type).
- tridens* Dujardin, 1845a, 23.
1845: *Thominx*.
- tridentatus* Dujardin, 1845a, 233–234.
1845: *Enoplus* (? type). [1845: *Tricontus* (? type).]
- trigonocephalus* Rudolphi, 1809a, 231–232.
1809: *Strongylus*. 1845: *Dochmius*. [1861: *Monodontus*.] 1886: *Unçinaria*.
[?]: *Ankylostoma*. [1902: *Bunostomum* (type).]
- Trilobus* Bastian, 1865c, 93, 99–100. Type species *T. gracilis*, designated by Bastian in letter to Stiles, dated March 22, 1904.
gracilis Bastian, 1865c, 99, pl. 9, figs. 20–22. ♂ ♀
pellucidus Bastian, 1865c, 100, pl. 9, figs. 23–24. ♀
longus (Leidy, 1851) Bastian, 1865c, 100.
[Not *Trilobus* Bruenn., 1781, crustacean.]
- Triodontophorus* Looss, 1902, 13. May, 37, 78–86; = *Triodontus* Looss, 1900 [not Westwood, 1845], renamed. Type species *Triodontophorus serratus*, designated as type in a personal letter from Looss to Stiles, dated Oct. 3, 1903.
minor (Looss, 1900) Looss, 1902, 82–83, pl. 3, figs. 23–30. ♂ ♀
serratus (Looss, 1900) Looss, 1902, 83–84, pl. 3, figs. 31–38. ♂ ♀
- Triodontoporus* Geddes, 1903a, 56, 93. For *Triodontophorus*, 1902.
- Triodontus* Looss, 1900, 12. Feb., 153, 190–191. Type species by present designation *T. serratus*. See also *Triodontophorus*.
[Not *Triodontus* Westwood, 1845, coleopteron; *Triodon* Cuvier, 1829, fish; Ameghino, 1875, mammal.]

Triodontus Looss—Continued.

minor Looss, 1900, 190–191. ♂ ♀

serratus Looss, 1900, 191. ♂ ♀

robustus (Giles, 1892) Looss, 1900, 190. Type of *Æsophagodontus*, 1902.

Tripula Bastian, 1865c, 93, 178. Changed to *Tripula*.

Tripula Bastian, 1865c, 93, 115–116; = *Tripula* renamed. Type species *T. glomerans*, designated by Bastian in letter to Stiles, dated March 22, 1904.

1865: *Tripula* Bastian, 1865c, 93, 178.

[Not *Tripylus* Phil., 1845, echinoderm.]

glomerans Bastian, 1865c, 115–116, pl. 9, figs. 16–17. ♂

salsa Bastian, 1865c, 116, pl. 9, figs. 18–19. ♀

Tripuloides de Man, 1886, 60–66. Type species *T. vulgaris*, designated in letter by de Man to Stiles, dated Nov. 30, 1903.

vulgaris de Man, 1886, 61–66, pl. 11, figs. 1–11.

[*marina* Buetschli, 1874] de Man, 1886, 60, 66.

tritici Steinbuch, 1799, 251; or Bauer, 1823, 1–16, pl. 1, figs. 1–23; pl. 2, figs. 1–2. [Both authors quote Roffredi.]

1799: *Vibrio*. 1823: *Vibrio*. [1838: *Anguillula*.] 1845: *Rhabditis*. [1850: *Anguillula*.]

1859: *Anguillulina* (probably type). 1865: *Tylenchus*. 1893:

Anguillulina (probably type).

tritici Bastian, 1865c, 120, pl. 10, figs. 91–92.

1865: *Plectus*.

Tropidocerca Diesing, 1851a, 80, 207. *T. paradoxa* (Diesing, 1835) Diesing, 1851a, only species, hence type; includes *Tropisurus paradoxus* Diesing, 1835a, *Tetrameres hæmochrous* Creplin, 1846a, and *Spiroptera inflata* Mehlis. See also *Acanthophorus*.

Tropidurus Wiegmann, 1835, 338, for *Tropisurus* Diesing, 1835.

[Not *Tropidurus* Neuwied, 1824, reptile.]

Tropisurus Diesing, 1835a, 83, 93–105. *T. paradoxus* Diesing, 1835a, 94–105, only species, hence type.

1835: *Tropidurus* Wiegmann, 1835 [not Neuwied, 1824, reptile].

1846: *Tetrameres* Creplin, 1846a [not Schaufuss, 1877, coleopteron].

1851: *Tropidocerca* Diesing, 1851a.

[Not *Tropidurus* v. Neuwied, 1824, lizard.]

truncata Rudolphi, 1793, 12.

1793: *Ascaris*. [1801: *Liorhynchus* (probably type).] 1802: *Liorhynchus*.

truncata Zeder, 1803a, 105–106 [not Rudolphi, 1793].

1803: *Fusaria*. 1809: *Ascaris*. 1845: *Ascaridia* (? type).

truncata Creplin, 1825a, 12–14.

1825: *Spiroptera*. 1845: *Dispharagus*.

truncata Plieninger, 1852, 255.

1852: *Filaria*.

truncatus Lamarck, 1801, 340.

1801: *Crino* (type).

truncatus Bastian, 1865c, 101, pl. 9, figs. 25–26.

1865: *Mononchus* (type).

truttæ Fabricius, 1794, 30–33, pl. 3, figs. 9–12.

1794: *Cucullanus*. [1845: *Dacnitis globosa* sub.]

tuberculatus Eberth, 1863a, 38–39, pl. 4, figs. 1–5.

1863: *Enoplus*. 1865: *Phanoderma*.

tubifera Fabricius, 1780a, 273. Includes *Ascaris urksuk* Mueller.

1780: *Ascaris*. 1790: *Echinorhynchus*. 1791: *Proboscidea*. [1801: *Liorhynchus*.]

tumida Zeder, 1803a, 61.

1803: *Capillaria*.

tunbridgensis Bastian, 1865c, 102, pl. 9, figs. 31-32.

1865: *Mononchus*.

tunicatus Diesing, 1839a, 230-232, pl. 15, figs. 1-8; = *heterolobus* Diesing, 1838a, 189, renamed.

1839: *Heterocheilus* (type).

Tylenchus Bastian, 1865c, 94. Changed to *Tylenchus* Bastian, 1865c, 125-128, 178.

Tylencholaimus. Can not trace (see Scudder, 1894, 330). For *Tylencholaimus*.

Tylencholaimus de Man, 1876, 119-123. Type species *T. mirabilis*, designated in-letter from de Man to Stiles, dated Nov. 30, 1903.

mirabilis (Buetschli, 1873) de Man, 1876, 120. ♀

minimus de Man, 1876, 120-122, pl. 6, figs. 16, a-b. ♀

zeelandicus de Man, 1876, 122-123, pl. 6, figs. 17, a-b. ♀

Tylenchus Bastian, 1865c, 125-128; = *Tylenchus* renamed. Type species *T. darainii*, designated by Bastian in letter to Stiles, dated March 22, 1904.

darainii Bastian, 1865c, 126, pl. 10, figs. 109-111. ♂ ♀

tritici (= *tritici* misspelled) Bastian, 1865c, 126-127, pl. 10, figs. 112-114. ♂ ♀

terricola Bastian, 1865c, 127-128, pl. 10, figs. 115-116. ♀

obtusius Bastian, 1865c, 128, pl. 10, figs. 117-118. ♂ ♀

dipsaci (Kuhn, 1857) Bastian, 1865c, 128.

agrostidis Bastian, 1865c, 128. Includes *Vibrio graminis* Steinbuch, *Anguillula gramineorum* Diesing *partim*.

Tyrolaimophorus de Man, 1880, 63-64. *T. typicus* de Man, 1880, 64, only species, hence type.

Tylopharynx de Man, 1876, 116-119. *T. striata* de Man, 1876, 117-119, pl. 6, figs. 15, a-d, only species, hence type.

typica Diesing, 1861a, 644; = *allodapa* renamed.

[1853: *Oxyuris allodapa*.] 1861: *Allodapa* (type).

typicus Diesing, 1861a, 669.

1861: *Conocephalus* (type). 1883: *Peritrachelius*. 1894: *Ascaris* (*Peritrachelius*).

typicus de Man, 1880, 64.

1880: *Tyrolaimophorus* (type).

typicus Cobb, 1891c, 157-158, figs. 9, i-iv.

1891: *Dipeltis* (type). 1905: *Diplopeltis* (type).

Uncinaria Fischer, 1799a, 99. Apparently a misprint for *Uncinaria*.

Uncinaria Frœlich, 1789a, 130-139. Type species *Uncinaria vulpis* Frœlich, 1789a.

1799: *Uncinaria* Fischer, 1799a, 99. Apparently misprint for *Uncinaria*.

1845: *Dochmius* Dujardin, 1845a, 267, 276-279; = *Uncinaria* renamed; hence type species *Uncinaria vulpis*.

1902: *Uncinaria* von Linstow, 1902. Misprint for *Uncinaria*.

1903: *Uncinnaria* Schmaltz, 1903. Misprint for *Uncinaria*.

[Not *Uncinaria* Vest., 1867, mollusk.]

uncinatus Molin, 1858, 154.

1858: *Echimocephalus* (type).

uncinipenis Molin, 1860, 928-929.

1860: *Spiroptera*. 1861: *Cheilospirura*.

Uncinnaria Schmaltz, 1903, 15. Jan., 42. Misprint for *Uncinaria*.

Uncinaria von Linstow, 1902, 16. Dec. (Zool. Centralbl., Leipz., v. 9 (24-25), 778).

Misprint for *Uncinaria*.

"*unilinguis* Schrank, 1797, 231, n. 2." [Not accessible to us.]

1797: *Linguatula*. [1809: *Hamularia nodulosa*.] [1819: *Trichosoma longicolle*.]

Uracanthus Diesing, 1861a, Dec. 6, 728. *U. brevispinosus* Diesing, 1861, only species, hence type.

[Not *Uracantha* Hope, ante 1846 [see Agassiz, 1842-46], coleopteron; *Uracanthus* Fitzinger, 1865, bird.]

- Urolabes* Carter, 1858a, June, 414. *U. palustris* Carter, 1858a, 414, only species, hence type.
- ustilago* Linnæus, 1767, 1326.
1767: *Chaos*.
- vacilans* Leidy, 1856, 50.
1856: *Nema* (type).
- vacillatum* Leidy, 1855, 144.
1855: *Pontonema* (? type).
- varius* Leidy, 1851, 263.
1851: *Gordius*. 1897: *Paragordius* (type).
- vejdoskyi* Janda, 1895a, 3-4, pl. 6, figs. 1-4.
1895: *Gordius*. 1897: *Parachordodes*.
- veligera* Rudolphi, 1819a, 656.
1819: *Ascaris*. 1866: *Dermatoxys* (type).
- velox* Bastian, 1865c, 119, pl. 10, figs. 85-86.
1865: *Plectus*.
- velox* Bastian, 1865c, 157, pl. 13, figs. 189-191.
1865: *Theristus*. 1889: *Monohystera* (*Penzancia* (type)).
- Vena* Gallandat, 1773a, 103-116. "Qui *Dracunculus* dicitur sive *Vena Medinensis*."
See *Dracunculus*.
- vermicularis* Linnæus, 1758a, 648.
1758: *Ascaris*. 1803: *Fusaria*. 1819: *Oxyuris*. 1905: *Oxyurias* (type).
- vermis* Pereboom, 1780, 1-24, figs. 1-4.
1780: *Stomachida* (type). See *Ascaris*.
- vesicularis* Frœlich, 1791a, 85-88, pl. 3, figs. 12-14, emend. Creplin. See *papillosa* Bloch, 1782a.
1791: *Ascaris*. 1845: *Heterakis* (type).
- vesicularis* Rudolphi, 1809a, 129, in part. See also *Heterakis vesicularis* and *Ascaris vesicularis* Frœlich, 1791a.
1809: *Ascaris*. [1845: *Ascaris* (*Ascaridia*) *inflexa* sub.]
- vesiculosa* Schneider, 1866, 109, 1 fig.
1866: *Ceratospira* (type).
- Vibrio* Mueller, 1773, 39-49. Type species very doubtful.
- lineola* Mueller, 1773, 39. To *Melanella atoma* by Bory, 1824; to *Vibrio* by Ehrenberg, 1830a, 61, 66, 69, 70; 1831, 69, 70; 1838a, 79.
- bacillus* Mueller, 1773, 40. To *Enchelys* by Oken, 1815, 36; to *Vibrio* by Bory, 1824a; Ehrenberg, 1830a, 1831, 1838a.
- anguillula* Mueller, 1773, 41; = *Anguillula glutinis* (Mueller, 1783) Mueller, 1786, 64 (type of *Anguillula*).
- serpentulus* Mueller, 1773, 42. To *Amblyura* by Hemprich & Ehrenberg, 1828a (? type).
- vermiculus* Mueller, 1773, 42-43. To *Bursaria intestinalis* by Ehrenberg, 1835a, 164; 1838a, 82, 327.
- undula* Mueller, 1773, 43-44. To *Spirillum* by Ehrenberg, 1830a, 38; 1831, 68; 1838a, 84.
- intestinum* Mueller, 1773, 44. To *Enchelys* ? by Ehrenberg, 1838a, 82.
- proteus* Mueller, 1773, 45, or (Pallas, 1766). Includes *Proteus* Baker, 1752, see *Chaos chaos*, p. 38; and *Brachionus* cf. Pallas. To *Amœba* (? 1878). Possibly type of *Vibrio*, by inclusion.
- falx* Mueller, 1773, 46. To *Trachelius* Ehrenberg, 1838a, 82, 323.
- anser* Mueller, 1773, 46-47. To *Amiba* by Bory, 1822a; to *Amphileptus* Ehrenberg, 1830a, 43; 1831, 116; 1833; 1835a; 1838a.
- cygnus* Mueller, 1773, 47. To *Trachelius*, 1803, 56; to *Amiba* by Bory, 1822a; to *Amphileptus anser* by Ehrenberg, 1830a, or 1838a, 82.
- malleus* Mueller, 1773, 47-48. To *Cercaria* by Ehrenberg, 1838a, 82.

Vibrio Mueller—Continued.

utriculus Mueller, 1773, 48. ? To *Trachelius* by Schrank, 1803; Ehrenberg, 1838a, 82, 323.

fasciola Mueller, 1773, 48–49. To *Paramacium* by Mueller, 1776, 280; to *Trachelius* by Ehrenberg, 1830a, 54, 56, 78; 1831, 116; 1835a, 164; 1838a, 356.
colymbus Mueller, 1773, 49. To *Amphileptus* by Ehrenberg, 1838a, 82.

This case is so complicated that we have no desire to suggest a ruling upon it at present. So far as we have followed it, however, the nematodes seem to be eliminated from any further necessity of consideration as type of *Vibrio*. Our catalogue does not as yet contain full cross references for this genus, but possibly *proteus* is type by inclusion.

villosus Bastian, 1865c, 123, pl. 10, figs. 99–101.

1865: *Aphelenchus*.

violaceus Baird, 1853a, 36–37.

1853: *Gordius*. 1897: *Parachordodes*.

viperæ Rudolphi, 1819a, 37.

1819: *Strongylus*. 1851: *Diaphanocephalus*.

Viscosia de Man, 1890, 184–189. Subgenus of *Oncholaimus*. Type species by virtual tautonymy *O. (Viscosia) viscosus*; also by subsequent designation by de Man.

Oncholaimus (Viscosia) viscosus Bastian, 1865c, 136, pl. 11, figs. 131–133. ♂ ♀

Oncholaimus (Viscosia) langrunensis de Man, 1890, 186–188, pl. 4, fig. 8. ♂ ♀

Oncholaimus (Viscosia) glaber Bastian, 1865c, 136, pl. 11, figs. 129–130. ♂ ♀

viscosus Bastian, 1865c, 136, pl. 11, figs. 131–133.

1865: *Oncholaimus*. 1890: *Oncholaimus (Viscosia) [type]*.

vitiensis Gilson, 1898a, 335–369, 1 pl., figs. 1–23.

1898: *Carnoya* (type).

vitrea Hammerschmidt, 1838a, 358, pl. 4, figs. a–b.

1838: *Filarina* (type).

vitrinus Looss, 1905, 421, pl. 2, figs. 12–14.

1905: *Trichostrongylus*.

viripara Wedl, 1862, 471–472, pl. 2, figs. 24–26.

1862: *Tachygonetria* (type).

viripara Bastian, 1865c, 133–134, pl. 11, figs. 123–125.

1865: *Symplocostoma*. 1874: *Anoplostoma* (type).

viriparus von Linstow, 1899, 12–13, pl. 2, figs. 22–24, 26–27; pl. 4, fig. 41.

1899: *Ptercephalus* (type).

vryburgi Railliet, 1902, 107–108.

1902: *Agriostomum* (type).

vulgaris Mérat, 1821, 225; *lumbricoides*, 1758, renamed.

[1758: *Ascaris* (type).] 1821: *Lumbricoides* (type).

vulgaris Bastian, 1865c, 158–159, pl. 13, figs. 195–197.

1865: *Comesoma* (type).

vulgaris Bastian, 1865c, 167–168, pl. 13, figs. 233–235.

1865: *Chromadora* (type). 1886: *Euchromadora* (type).

vulgaris de Man, 1886, 61–66, pl. 11, figs. 1–11.

1886: *Tripylodes* (type).

vulgaris de Man, 1893, 119–122, pl. 7, fig. 13.

1893: *Enoplolaimus* (type).

vulgaris Cobb, 1898d, Dec. 9, 406–407.

1898: *Graphonema* (type).

vulpis Frælich, 1789a, 137–139, pl. 4, figs. 18–19.

1789: *Uncinaria* (type). [1845: *Dochmius* (type).]

wedlii Molin, 1861, 467–469. [See *Strongylus cernuus* and *Strongylus trigonocephalus*.]

1861: *Monodontus*. [1902: *Bunostomum* (type).]

- weismanni* zur Strassen, 1904, 302-346, figs. b, c, e, h, pl. 15, figs. 1-4; pl. 16, figs. 6-9.
 1904: *Anthraconema* (type).
wolterstorffii Camerano, 1888e, Apr. 6, 6.
 1888: *Gordius*. 1897: *Parachordodes*.
Xyo Cobb, 1898a, Mar., 315. *X. histrix* Cobb, 1898a, p. 315, fig. 37, only species, hence type.
zeelandicus de Man, 1876, 122-123, pl. 6, figs. 17, a-b.
 1876: *Tylencholaimus*.
zeelandicus de Man, 1880, 14-15.
 1880: *Desmolaimus* (type).
zolæ Marion, 1870, 29-30, pl. I, fig. 2.
 1870: *Thoracostoma*.
Zoniolaimus Cobb, 1898a, Mar., 312. Type species *Z. setifera*, designated by Cobb in letter to Stiles, dated Dec. 15, 1903.
setifera Cobb, 1898a, Mar., 312, figs. 30, i-v. ♂ ♀
brevicaudatus Cobb, 1898a, Apr., 440-441, figs. 102-103. ♂ ♀

ADDENDA.

- Cacullanus* Rafinesque, 1815, 151, misprint for *Cucullanus*.
Crinola Rafinesque, 1815, 151, new name for *Crino* Lam., hence same type.
Dacnites van Beneden, 1858a; 1861a, 271; = *Dacnitis* Duj.
Dyctophymus Rafinesque, 1815, 151, new name for *Diectophyme*, hence same type:
Echiramphus Rafinesque, 1815, 151, new name for *Echinorinchus* Mueller, hence same type.
Hærucula Rafinesque, 1815, 151, new name for "*Hæruca* L.," hence same type.
Heteroura Siebeld, 1836, 116; *Hedruris* Nitzsch renamed, hence type *androphora*.
Loa Stiles, MS. (new subgenus). Type *Filaria loa* Guyot. 1778.
Oxyurias Stiles, MS. (new subgenus). Type *Oxyuris vermicularis* (Linnaeus, 1758).
Rhabdias Stiles & Hassall, 1905, 123, 150, type *R. bufonis* (Schränk, 1788), equals *Ascaris nigrovenosa*.
Spherurus Rafinesque, 1815, 151, nomen nudum; new genus of *Scolexia* to contain species of *Ascaris*; but these are not mentioned.
Toxocara Stiles, MS. (new genus). Type *Lumbricus canis* Werner, 1782.
Trichostrongylus Looss, 1905 (*retortæformis*); add to table of genera, p. 31.